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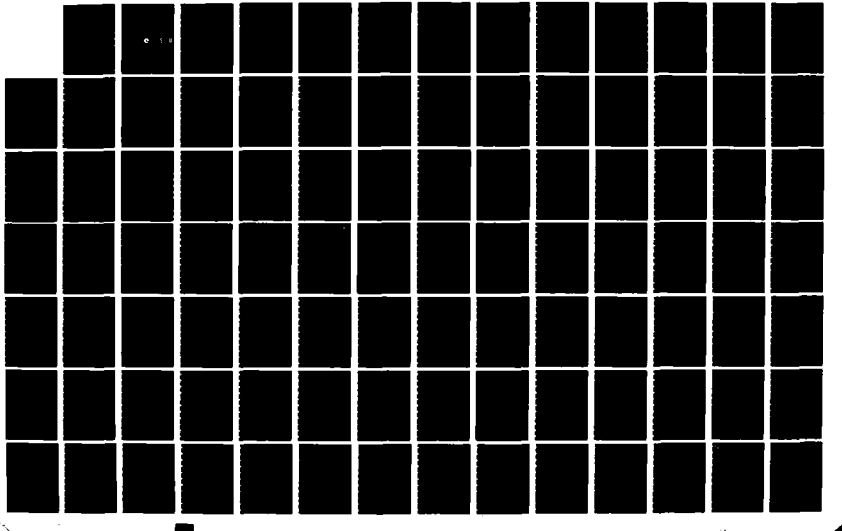

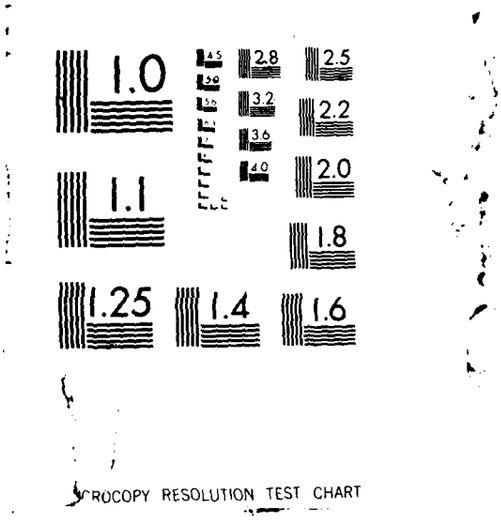
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Report No. FAA-RD-81-55

AD-A175 179

# RECOMMENDED CHANGES TO ATC PROCEDURES FOR HELICOPTERS

Helicopter Association International
Washington, D.C. 20005



JUNE 1981
FINAL REPORT





Prepared for
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15. Supplementary Notes

The study leading to this report was conducted as a result of an initiative by the FAA Helicopter Systems Branch of the Navigation and Landing Division under the direction of Raymond J. Hilton, Program Manager, and is particularly responsive to Recommendation No. 12 of Report No. FAA-RD-80-8[illegible].

16 Abstract

FAA Air Traffic Control Handbook 7110.65B was reviewed on a paragraph by paragraph basis to identify those changes considered necessary to more efficiently accommodate helicopters in the Air Traffic Control System. As a result of this review, specific proposed changes are set forth in this report. An HAA(HAI) special ATC study working group was established by the HAA program manager to assist in the conduct of the project, and various direct industry contacts were held to solicit inputs.

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## PROJECT PLAN

This project was undertaken initially by the Helicopter Association of America (HAA), the name of which was changed by membership decision in January, 1981, to the Helicopter Association International (HAI). The Association remains a non-profit organization as before.

The report which follows describes the methodology employed in performing the study called for by the Federal Aviation Administration (FAA) Statement of Work as contained in Modification No. 0003 to contract DOT-FA7WA-4303, and the report specifies the resulting proposed changes to FAA Air Traffic Control Handbook 7110.65B. Rationale for such changes is included where considered useful.

This Association believes that the review of ATC procedures as they may affect helicopter operations should be an on-going process as these operations increase and expand in scope. Consequently, this study should not be considered as the ultimate treatment of this subject, and the HAI will, therefore, extend its continuing cooperation to the FAA as further efforts in this area take place.

Prepared by:

Glen A. Gilbert
HAI Program Manager

Approved by:

Robert A. Richardson
HAI Executive Director

## STATEMENT OF WORK

In accordance with Contract DOT-FA79-WA-4303, the Helicopter Association of America (hereinafter referred to as the Helicopter Association International) prepared a report titled "Helicopter Northeast Corridor Operational Test Support" (Report No. FAA-RD-80-80) dated June 1980. Recommendation No. 12 of this report stated:

> "A complete review of ATC Handbook 7110-65B and the Airman's Information Manual (AIM) should be conducted to examine all aspects affecting or relating to helicopter operations (IFR and VFR)."

On September 29, 1980, the Federal Aviation Administration, in Amendment No. 0003 to the above contract, entered into an agreement with the HAA to perform the following additional Statement of Work:

> "5.a. Analyze the Air Traffic Control Manual 7110.65B, paragraph by paragraph to determine necessary changes to the manual to more efficiently accommodate helicopters in the air traffic control system.
>
> 5.b. Develop and coordinate recommended changes to the manual with appropriate representation of the helicopter industry."

## METHOD OF APPROACH

As the first step in performing the Statement of Work, the program manager for the Helicopter Association International (HAI) formed a nine member special "Helicopter ATC Study Working Group". Copies of up to date FAA Handbook 7110-65B, along with pertinent guidelines for performance of the task of the Working Group, were sent to each member with the HAI Program Manager's Memorandum No. 1, dated November 5, 1980.

Thereafter, nine additional memoranda were sent by the HAI program manager to the Working Group members. As appropriate, copies of these memoranda also were sent to the FAA Technical Monitor for this project, Raymond J. Hilton (ARD-330), and the FAA Air Traffic Service Liaison for the project, Glenn A. Leister (ATT-320).

On January 20, 1981, a special combined meeting of the HAA (HAI) ATC Subcommittee and TERPS Working Groups was held in Anaheim, California, in conjunction with the HAA's 33rd Annual Meeting and Industry Exposition (see agenda).

It should be noted that Memoranda Nos. 9 and 10 were sent to both the special Helicopter ATC Study Working Group and the HAA (HAI) ATC Subcommittee. The membership roster of the HAA (HAI) ATC Subcommittee precedes Memorandum No. 9.

Frequent consultation during the period of the study was made by the HAI Program Manager with members of the special ATC Working Group and various members of the HAA (HAI) ATC Subcommittee. In addition, the study integrator, Tirey K. Vickers, conferred from time to time with FAA Air Traffic Services Washington and field personnel. In this connection, Harry Hawkins of the FAA's Lafayette Tower and James Knoetgen of the FAA's Eastern Regional Office (although not a member of the special Working Group) merit special acknowledgement for their significant contributions.

During the course of this study the FAA ATC Operations and Procedures Division was engaged in a similar review of the ATC HAndbook. This review resulted in several recommendations pertaining to helicopter operations. Some of these recommendations turned up in the material received from the Working Group members; these recommendations have been included as an indication of the endorsement and support of the Working Group. In such cases the source of each recommendation has been identified as FAA AAT-320.

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November 3, 1980

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## RECOMMENDED CHANGES TO ATC PROCEDURES FOR HELICOPTERS

Based on the inputs received by the HAI as a result of carrying out the methodology described in the preceding section of this study, the following "Recommended Changes to ATC Procedures for Helicopters" were prepared and are proposed by the HAI for incorporation in FAA Handbook 7110.65B. In addition, an Addendum is included outlining certain topics which appear to warrant further study based on flight tests and/or simulations as may be appropriate.

It should be understood that the HAI endorses the FAA proposals re 7110.65B as covered by Memorandum No. 10 set forth in the Appendix, except that the HAI considers that the recommended changes which follow should govern in any case of conflict with or extension of these FAA proposals.

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| EXISTING | PROPOSED |
| --- | --- |
| Page 10 | |
| ✦35. MINIMUM FUEL<br>If an aircraft declares a state of "minimum fuel," inform any facility to whom control jurisdiction is transferred of the minimum fuel problem and be alert for any occurrence which might delay the aircraft en route. | 35. (no change) |
| 35. Note.—Use of the term "minimum fuel" indicates recognition by a pilot that his fuel supply has reached a state where, upon reaching destination, he cannot accept any undue delay. This is not an emergency situation but merely an advisory that indicates an emergency situation is possible should any undue delay occur. A minimum fuel advisory does not imply a need for traffic priority. Common sense and good judgment will determine the extent of assistance to be given in minimum fuel situations. If, at any time, the remaining usable fuel supply suggests the need for traffic priority to ensure a safe landing, the pilot should declare an emergency and report fuel remaining in minutes. | |
| (insert) | 36. HELICOPTER FREQUENCY CHANGE<br>Avoid issuing a frequency change to single-piloted helicopters while taxiing, hovering, or flying near the ground. If in doubt, query the pilot as to his ability to change frequency. In an emergency or critical situation, relay the necessary control instructions until the pilot is able to change frequency.<br>36. NOTE. Most single-piloted helicopters require the use of both hands and feet to maintain control. Although control friction devices assist the pilot, changing frequency could result in loss of control. |
| 36-39. RESERVED | 37-39. RESERVED (Renumbered) |

RATIONALE: There is a need to alert controllers to the potential hazard involved when a single piloted helicopter is requested to change radio frequency when operating near the ground.

SOURCE: FAA AAT-320

**EXISTING** | **PROPOSED**

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87.a. AIRCRAFT IDENTIFICATION

(3) Type only, if no confusion or misidentification is likely.

b. Air Carrier:

(1) Manufacturer's name or model.

(2) Add company name or other identifying features when confusion or misidentification is likely.

88.b. Examples.—

"Lockhead ten-eleven." "American seven-oh-seven." "United seven thirty-seven."

(Correction)
"Lockheed ten-eleven"....

88.b. Note.—*TERMINAL:* Pilots of 'interchange' aircraft are expected to inform the tower on first radio contact the name of the operating company and trip number, followed by the company name as displayed on the aircraft, and aircraft type.

c. General Aviation and Air Taxi:

(Inserts)

(1) Manufacturer's model, name or designator.

(2) Add color when considered advantageous.

(3) Add HELICOPTER when considered advantageous.

88.c. Examples.—

"Tri-Pacer." "PA twenty-two."

"Cessna three ten." "Green Apache."

"Yellow Hughes helicopter"

d. When issuing traffic information to aircraft cleared for a visual approach, specify the word "heavy" when you know the traffic is a heavy aircraft.

88.d. Examples.—

"Heavy C one forty-one."

89-99. RESERVED

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RATIONALE: Most helicopters make relatively small visual targets, especially when seen from front or rear. Using a descriptive term would give other pilots a useful clue as to what to look for.

SOURCE: HAI Working Group

## BACKGROUND NOTES ON HELICOPTER SPECIAL VFR OPERATIONS

RATIONALE: Some confusion has existed among pilots and controllers, about the application of Helicopter Special VFR (HSVFR) procedures. Although Chapter 3 of Handbook 7110.65B has a section entitled Fixed Wing Special VFR, there is no corresponding section for Helicopter Special VFR. There is no definition of either term, either in the Federal Air Regulations or in the Glossary of FAA Handbook 7110.65b.

In order to simplify control workload and clarify the application of procedures for Helicopter Special VFR (HSVFR) Operations, the following recommendations are made:

(1) Remove helicopter applications from the existing SVFR and FW/SVFR sections of Manual 7110.65B.

(2) Establish a HSVFR section parallel to the FW/SVFR section and incorporate these requirements with the HSVFR separation standards which now appear in paragraphs 1140-1141.

(3) Change the existing requirement for a Letter of Agreement to a Letter to Airmen, to eliminate the need for controllers to determine whether any particular helicopter or pilot is covered.

(4) Remove the fixed-wing restriction from 1141.b through 1141.f so that it covers IFR helicopters as well as IFR fixed-wing aircraft.

(5) Change the HSVFR separation minimum from departing IFR aircraft, in existing paragraph 1141.d.(2), from 2 miles to 1-1/2 miles, to standardize it with the corresponding separation from arriving aircraft, or from Category I and II aircraft in Stage III TCA operations.

(6) Change the distance-from-runway criteria of existing paragraph 1141.d from 1/2 mile to 1 mile to standardize it for the arrival and departure ends of the runway.

(7) Include a summary of HSVFR separation criteria in a matrix for easy reference by controllers.

SOURCE: HAI Working Group

## EXISTING

### Section 16. SPECIAL VFR

**470. AUTHORIZATION**

Except where prohibited by FAR 93.113, you may authorize Special VFR operations in weather conditions less than basic VFR minima only as follows:

a. Within control zones.

b. When requested by the pilot.

c. On the basis of weather conditions reported at the airport of intended landing/departure, or

470.c. References.—Climb to VFR, 472; Ground Visibility Below One Mile, 477.

d. When weather conditions are not reported at the airport of intended landing, and the pilot advises he is unable to maintain VFR and requests Special VFR.

*Phraseology:*

CLEARED TO ENTER/OUT OF/THROUGH CONTROL ZONE

*and, if required*

(direction) OF (airport name) AIRPORT (specified routing)

*and*

MAINTAIN SPECIAL V-F-R CONDITIONS WHILE IN CONTROL ZONE.

**471. LOCAL OPERATIONS**

Authorize local Special VFR operations for a specified period (series of landings and takeoffs, etc.) upon request, if the aircraft can be recalled when traffic or weather conditions require. Where warranted, Letters of Agreement may be consummated.

*Phraseology:*

LOCAL SPECIAL V-F-R OPERATIONS IN THE IMMEDIATE VICINITY OF (airport name) AIRPORT ARE AUTHORIZED UNTIL (time). MAINTAIN SPECIAL V-F-R CONDITIONS.

471. References.—7210.3—431, Appropriate Subjects.

**472. CLIMB TO VFR**

Authorize an aircraft to climb to VFR upon request if the only weather limitation is restricted visibility.

*Phraseology:*

CLIMB TO V-F-R WITHIN THE CONTROL ZONE/WITHIN (a specified distance within control zone) MILES FROM (airport name) AIRPORT, MAINTAIN SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.

## PROPOSED

### SECTION 16, FIXED-WING SPECIAL VFR (FW/SVFR)

**470. AUTHORIZATION**

Except where prohibited by FAR 93.113, you may authorize Special VFR operations for fixed-wing aircraft in weather conditions less than basic VFR minima only as follows:

a. Within control zones.

b. When requested by the pilot.

c. On the basis of weather conditions reported at the airport of intended landing/departure, or

470.c. Reference.—Climb to VFR, 472; Ground Visibility Below One Mile, 477.

d. When weather conditions are not reported at the airport of intended landing, and the pilot advises he is unable to maintain VFR and requests Special VFR.

*Phraseology:*

CLEARED TO ENTER/OUT OF/THROUGH CONTROL ZONE

*and, if required*

(direction) OF (airport name) AIRPORT (specified routing)

*and*

MAINTAIN SPECIAL V-F-R CONDITIONS WHILE IN CONTROL ZONE.

**471. LOCAL OPERATIONS**

Authorize local Special VFR operations for fixed-wing aircraft during a specified period (series of landings and takeoffs, etc.) upon request, if the aircraft can be recalled when traffic or weather conditions require.

*Phraseology:*

LOCAL SPECIAL V-F-R OPERATIONS IN THE IMMEDIATE VICINITY OF (airport name) AIRPORT ARE AUTHORIZED UNTIL (time). MAINTAIN SPECIAL V-F-R CONDITIONS.

471. Reference.—7210.3—431, Appropriate Subjects.

**472. CLIMB TO VFR**

Authorize a fixed-wing aircraft to climb to VFR upon request if the only weather limitation is restricted visibility.

*Phraseology:*

CLIMB TO V-F-R WITHIN THE CONTROL ZONE/WITHIN (a specified distance within control zone) MILES FROM (airport name) AIRPORT, MAINTAIN SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.

## EXISTING

### 473. SEPARATION

Apply approved separation between:

a. Special VFR aircraft.

b. Special VFR aircraft and IFR aircraft.

473. Note.—Approved separation is that prescribed for IFR and Special VFR in 180 and 474. Radar vectors are authorized as prescribed in 660. (See paragraph 1.h.)

### 474. ALTITUDE ASSIGNMENT

Do not assign a fixed altitude when applying vertical separation, but clear the Special VFR aircraft at or below an altitude which is at least 500 feet below any conflicting IFR traffic but not below the minimum safe altitude prescribed in FAR 91.79.

474. Note 1.—Special VFR aircraft are not assigned fixed altitudes because of the clearance from clouds requirement.

474. Note 2.—The minimum safe altitudes are (1) over congested areas, an altitude at least 1000 feet above the highest obstacle, and (2) over other than congested areas, an altitude at least 500 feet above the surface.

*Phraseology:*
MAINTAIN SPECIAL V-F-R CONDITIONS AT OR BELOW (altitude).

### 475. SPECIAL VFR HELICOPTER SEPARATION

Control a Special VFR helicopter by Special VFR procedures unless other procedures are contained in a Letter of Agreement.

475. Note.—Control of IFR helicopters is governed by nonradar or radar procedures and minima.

475. Reference.—TERMINAL: Special VFR Helicopter Separation, Chap. 5, Sec. 14.

### 476. PRIORITY

a. FW/SVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

476.a. Example 1.—A FW/SVFR aircraft has been cleared to enter the control zone and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the FW/SVFR aircraft is allowed to proceed to the airport and land, rather than leave the control zone or be repositioned to provide IFR priority.

## PROPOSED

### 473. SEPARATION

Apply approved separation between:

a. Special VFR aircraft.

b. Special VFR aircraft and IFR aircraft.

473. Note.—Approved separation is that prescribed for IFR and Special VFR in 180 and 474. Radar vectors are authorized as prescribed in 660. (See paragraph 1.h.)

### 474. ALTITUDE ASSIGNMENT

Do not assign a fixed altitude when applying vertical separation, but clear the FW/SVFR aircraft at or below an altitude which is at least 500 feet below any conflicting IFR traffic but not below the minimum safe altitude prescribed in FAR 91.79.

*Phraseology:*
MAINTAIN SPECIAL V-F-R CONDITIONS AT OR BELOW (altitude).

474. Note 1.—Special VFR aircraft are not assigned fixed altitudes because of the clearance from clouds requirement.

474. Note 2.—The minimum safe altitudes are (1) over congested areas, an altitude at least 1,000 feet above the highest obstacle, and (2) over other than congested areas, an altitude at least 500 feet above the surface.

Delete (goes in HSVFR section)

### 475. PRIORITY

a. FW/SVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

475.a. Example 1.-A FW/SVFR aircraft has been cleared to enter the control zone and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the FW/SVFR aircraft is allowed to proceed to the airport and land, rather than leave the control zone or be repositioned to provide IFR priority.

## EXISTING

is "no," or an emergency exists, issue a clearance as soon as traffic conditions permit.

d. Authorize scheduled air carrier aircraft in the United States to conduct operations if ground visibility is not less than ½ statute mile.

477.d. Note.—FAR 121 permits landing or take-off by domestic scheduled air carriers where a local surface restriction to visibility is not less than ½ statute mile, provided all turns after takeoff or before landing and all flights beyond 1 statute mile from the airport boundary can be accomplished above or outside the area so restricted. The pilot is solely responsible for determining if the nature of the visibility restriction will permit compliance with the provisions of FAR 121.

e. Clear an aircraft to fly through the control zone if he reports flight visibility is at least 1 statute mile.

### 478. FLIGHT VISIBILITY BELOW ONE MILE

When weather conditions are not officially reported at an airport and the pilot advises the flight visibility is less than 1 statute mile, treat requests for Special VFR operations at that airport by other than helicopters as follows:

478. Note.—FAR 91 prescribes use of officially reported ground visibility at airports where it is provided, and landing or take-off "flight visibility" where it is not, as the governing ground visibility for basic and Special VFR operations.

a. Inform departing aircraft that a clearance cannot be issued.

b. Inform arriving aircraft operating outside of the control zone that a clearance cannot be issued unless an emergency exists.

c. Ask an arriving aircraft operating within a control zone if he can depart the control zone with a flight visibility of at least 1 statute mile. If the aircraft cannot depart the control zone accordingly, or an emergency exists, issue a clearance as soon as traffic conditions permit.

### 479. RESERVED

## PROPOSED

is "no," or an emergency exists, issue a clearance as soon as traffic conditions permit.

d. Authorize scheduled air carrier aircraft in the United States to conduct operations if ground visibility is not less than ½ statute mile.

476.d. Note.—FAR 121 permits landing or take-off by domestic scheduled air carriers where a local surface restriction to visibility is not less than ½ statute mile, provided all turns after takeoff or before landing and all flights beyond 1 statute mile from the airport boundary can be accomplished above or outside the area so restricted. The pilot is solely responsible for determining if the nature of the visibility restriction will permit compliance with the provisions of FAR 121.

e. Clear an aircraft to fly through the control zone if he reports flight visibility is at least 1 statute mile.

### 477. FLIGHT VISIBILITY BELOW ONE MILE

When weather conditions are not officially reported at an airport and the pilot advises the flight visibility is less than 1 statute mile, treat requests for FW/SVFR operations at that airport as follows:

477. Note.—FAR 91 prescribes use of officially reported ground visibility at airports where it is provided, and landing or take-off "flight visibility" where it is not, as the governing ground visibility for basic and Special VFR operations.

a. Inform departing aircraft that a clearance cannot be issued.

b. Inform arriving aircraft operating outside of the control zone that a clearance cannot be issued unless an emergency exists.

c. Ask an arriving aircraft operating within a control zone if he can depart the control zone with a flight visibility of at least 1 statute mile. If the aircraft cannot depart the control zone accordingly, or an emergency exists, issue a clearance as soon as traffic conditions permit.

## EXISTING

**470. AUTHORIZATION**

Except where prohibited by FAR 93.113, you may authorize Special VFR operations in weather conditions less than basic VFR minima only as follows:

a. Within control zones.

b. When requested by the pilot.

c. On the basis of weather conditions reported at the airport of intended landing/departure, or

471. Reference.—Climb to VFR, 472; Ground Visibility Below One Mile, 477.

d. When weather conditions are not reported at the airport of intended landing, and the pilot advises he is unable to maintain VFR and requests Special VFR.

*Phraseology:*

CLEARED TO ENTER/OUT OF/THROUGH CONTROL ZONE

*and, if required*

(direction) OF (airport name) AIRPORT (specified routing)

*and*

MAINTAIN SPECIAL V-F-R CONDITIONS WHILE IN CONTROL ZONE.

477. Note.—Far 91 does not prohibit helicopter Special VFR flights when visibility is less than 1 mile.

## PROPOSED

SECTION 18.

HELICOPTER SPECIAL VFR (HSVFR)

482. AUTHORIZATION

You may authorize helicopter Special VFR (HSVFR) operations in weather conditions less than basic VFR minima only as follows:

a. Within control zones.

b. When requested by the pilot.

c. On the basis of weather conditions reported at the airport of intended landing/ departure, or

d. When weather conditions are not reported at the airport of intended landing, and the pilot advises he is unable to maintain VFR and requests HSVFR.

482. d. NOTE 1. -FAR 91 does not prohibit HSVFR flights when visibility is less than 1 mile; however, helicopter must remain clear of clouds at all times.

482.d. NOTE 2. -FAR 91.105 (e) states: "No person may operate an aircraft (other than a helicopter) in a control zone under the special weather minimums of this section, between sunset and sunrise (or in Alaska when the sun is more than 6 degrees below the horizon) unless:

(1) That person meets the applicable requirements for instrument flight under Part 61 of this chapter; and

(2) The aircraft is equipped as required in paragraph 91.33 (d)".

EXISTING

PROPOSED

482.d. NOTE 3 -FAR 91.107 (b) states: "No person may operate an aircraft in a control zone under VFR conditions except clear of clouds."

482.d. NOTE 4 -FAR 91.105 (b) states: "When the visibility is less than one mile, a helicopter may be operated outside controlled airspace at 1,200 feet or less above the surface if operated at a speed that allows the pilot adequate opportunity to see any air traffic or other obstruction in time to avoid collision."

Phraseology:

CLEARED TO ENTER/OUT OF/THROUGH CONTROL ZONE and, if required (direction) OF (airport name) AIRPORT (specified routing) and MAINTAIN HELICOPTER SPECIAL V-F-R CONDITIONS WHILE IN CONTROL ZONE.

472. CLIMB TO VFR

Authorize an aircraft to climb to VFR upon request if the only weather limitation is restricted visibility.

*Phraseology:*

CLIMB TO V-F-R WITHIN THE CONTROL ZONE/ WITHIN (a specified distance within control zone) MILES FROM (airport name) AIRPORT, MAINTAIN SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.

483. CLIMB TO VFR

Authorize a helicopter to climb to VFR upon request if the only weather limitation is restricted visibility.

Phraseology:

CLIMB TO V-F-R WITHIN THE CONTROL ZONE/WITHIN (a specified distance within control zone) MILES FROM (airport name) AIRPORT, MAINTAIN HELICOPTER SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.

473. SEPARATION

Apply approved separation between:

a. Special VFR aircraft.

b. Special VFR aircraft and IFR aircraft.

473. Note.—Approved separation is that prescribed for IFR and Special VFR in 466 and 474. Radar vectors are authorized as prescribed in 466. (See paragraph 1.h.)

484. ALTITUDE ASSIGNMENT

Do not assign a fixed altitude when applying vertical separation, but clear the HSVFR aircraft at or below an altitude which is at least 500 feet below any conflicting IFR altitude.

EXISTING

478. PRIORITY

a. FW/SVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

478.a. Example 1.—A FW/SVFR aircraft has been cleared to enter the control zone and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the FW/SVFR aircraft is allowed to proceed to the airport and land, rather than leave the control zone or be repositioned to provide IFR priority.

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1140. APPLICATION

Control a special VFR helicopter by visual separation or special VFR procedures unless local procedures are contained in a Letter of Agreement.

PROPOSED

Phraseology:

MAINTAIN HELICOPTER SPECIAL VFR CONDITIONS AT OR BELOW (altitude)

485. PRIORITY

a. HSVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

485.a. Example 1.-A HSVFR aircraft has been cleared to enter the control zone and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the HSVFR aircraft is allowed to proceed to the airport and land, rather than leave the control zone or be repositioned to provide IFR priority.

486. APPLICATION

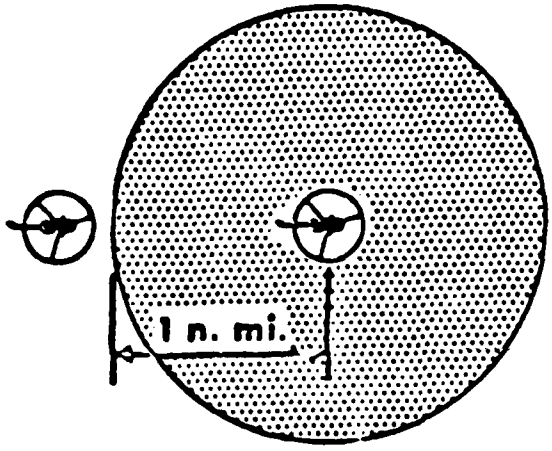
Control a Special VFR helicopter by visual separation or by application of the Special VFR separation standards listed in part 487 below. At locations where the volume or complexity of helicopter traffic warrants, a Letter to Airmen, (see Manual 7210.3E) shall specify the local Special VFR routes, procedures, visual references, reporting points, holding points, and helicopter traffic patterns necessary to assure separation.

1140. Note - Control of IFR helicopters is governed by IFR or radar procedures and minima.

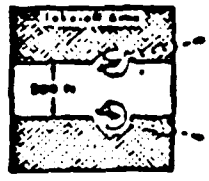
## 1141. LOCAL PROCEDURES

At locations where the volume or complexity of helicopter operations warrants, a Letter of Agreement shall specify that special VFR helicopters are required to maintain visual reference to the surface and the traffic patterns, routes and reporting or holding fixes necessary to achieve separation, in accordance with the following minima:

a. Between special VFR helicopters—*1 mile.* You may, however, use *200 feet* if they are departing simultaneously on diverging courses and you can determine this minimum by reference to the surface markings or you instruct one to remain at least *200 feet* from the other.



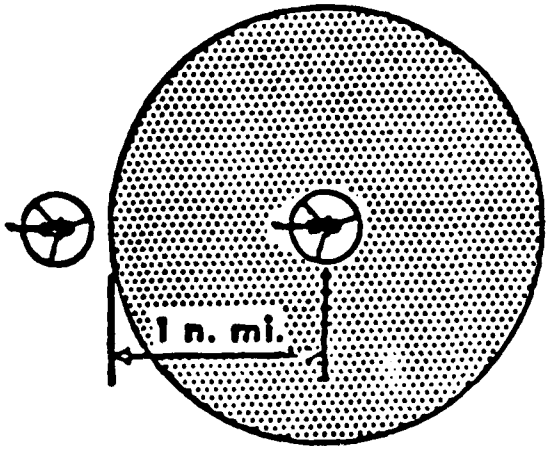

1141.a. Illustration 1



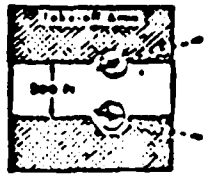
1141.a. Illustration 2

## 487. HSVFR SEPARATION STANDARDS

a. Between special VFR helicopters—*1 mile.* You may, however, use *200 feet* if they are departing simultaneously on diverging courses and you can determine this minimum by reference to the surface markings or you instruct one to remain at least *200 feet* from the other.




487.a. Illustration 1



487.a. Illustration 2

## EXISTING

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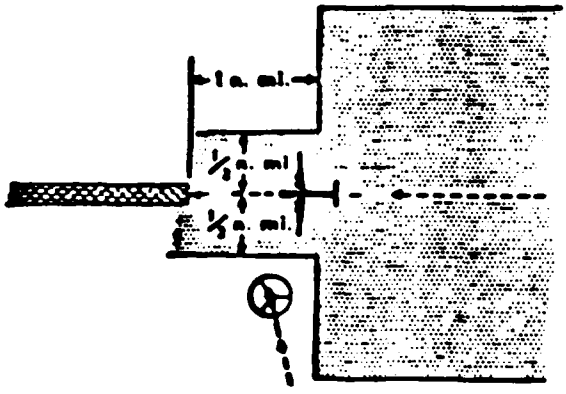
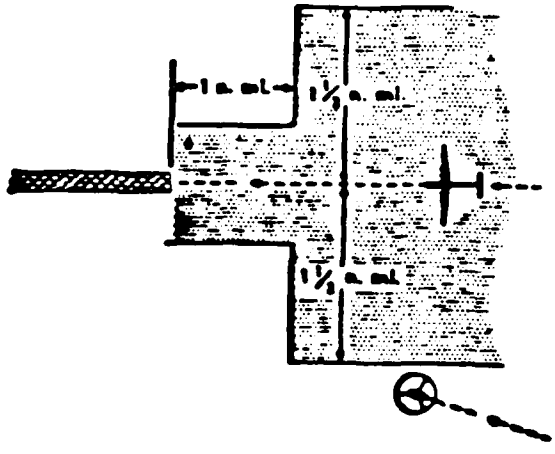
b. Between an arriving Special VFR helicopter and an arriving fixed wing IFR aircraft executing a straight-in approach:

(1) If the fixed wing aircraft is less than 1 mile from the landing threshold—½ *mile.*




1141.b.(1) Illustration

(2) If the fixed wing aircraft is 1 mile or more from the landing threshold—*1½ miles.*




1141.b.(2) Illustration

c. Between an arriving fixed wing IFR aircraft executing a circling approach or a missed approach and an arriving Special VFR helicopter—*2 miles.*

## PROPOSED

(487 continued)

b. Between an arriving Special VFR helicopter and an arriving IFR aircraft executing a straight-in approach:

(1) If the IFR aircraft is less than 1 mile from the landing threshold - ½ mile.

(2) If the IFR aircraft is 1 mile or more from the landing threshold 1½ miles.

c. Between an arriving IFR aircraft executing a circling approach and an arriving or departing Special VFR helicopter - 1½ miles.

## EXISTING

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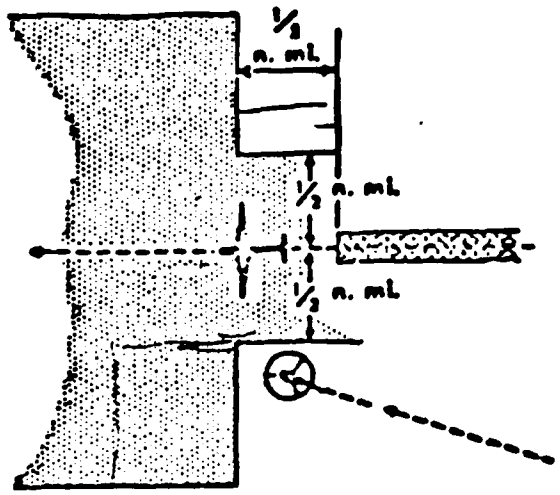
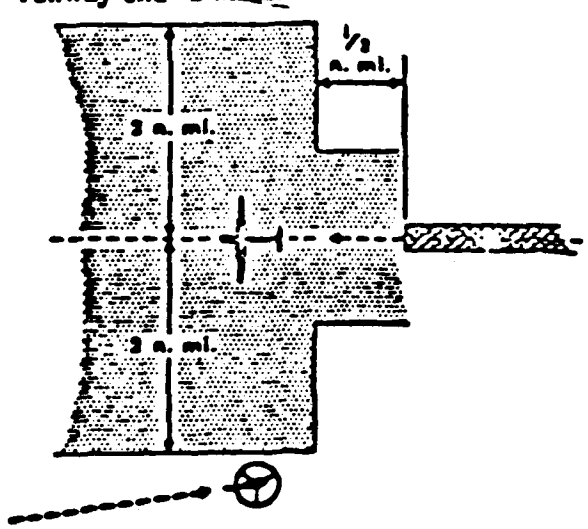
d. Between a departing fixed wing IFR aircraft and a Special VFR helicopter:

(1) If the fixed wing aircraft is less than ½ mile beyond the runway end—½ *mile*.



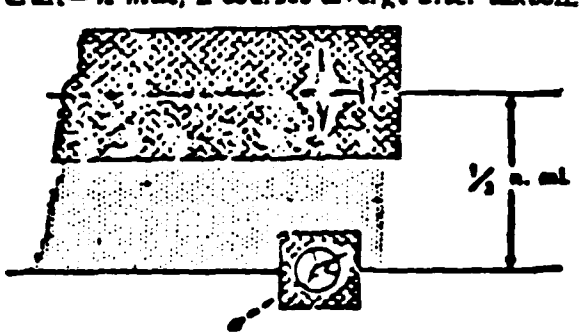

9141.4(1) Illustration

(2) If it is ½ mile or more beyond the runway end—~~2 miles~~.




9141.4(2) Illustration

e. Between a departing Special VFR helicopter and a departing fixed wing IFR aircraft—½ *mile*, if courses diverge after takeoff.




9141.e. Illustration

## PROPOSED

d. Between a departing IFR air craft and a Special VFR helicopter:

(1) If the IFR aircraft is less than 1 mile beyond the runway end-½ mile.

(2) If it is 1 mile or more beyond the runway end-1½ miles.

e. Between a departing Special VFR helicopter and a departing IFR aircraft-½ mile, if courses diverge after takeoff.

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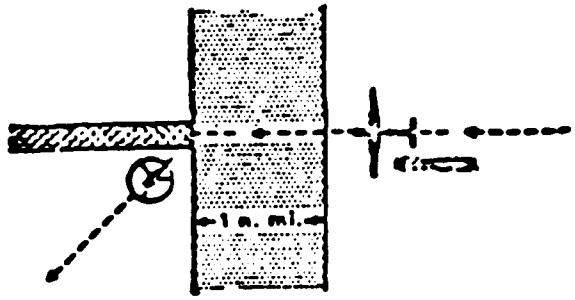
**EXISTING**

**PROPOSED**

f. Between an arriving fixed wing IFR aircraft and a Special VFR helicopter—sufficient separation to assure that the helicopter takes off on a diverging course before the arriving aircraft is *1 mile* from the airport.

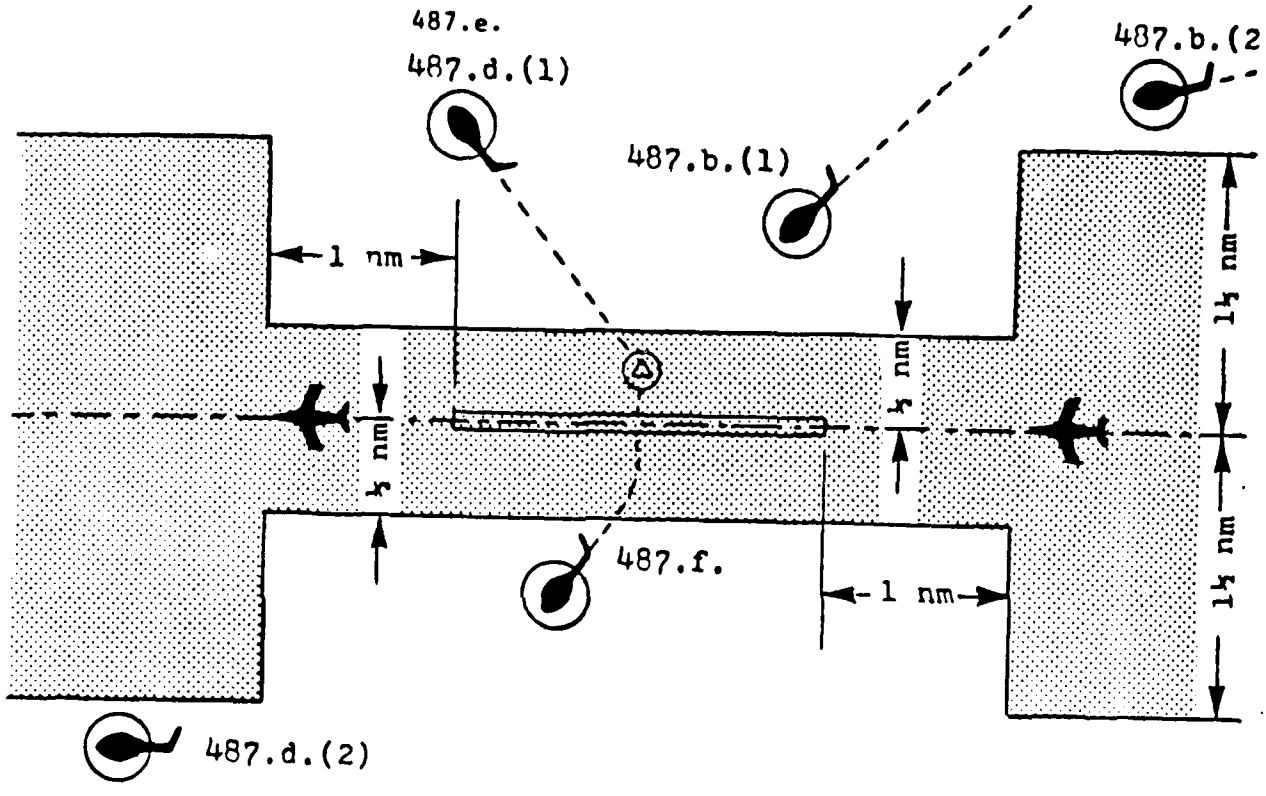



1141.f Illustration

1142-1149. RESERVED

f. Between an arriving IFR aircraft and a Special VFR helicopter-sufficient separation to assure that the helicopter is on a diverging course before the arriving aircraft is 1 mile from the airport.

1140.f. NOTE - Some helicopter flights will be in a direction which has to cross the active runway. Such flights must be across the runway and on a diverging course before the arriving IFR aircraft is one mile from the airport.




487.b.(1), 487.b.(2), 487.d.(1), 487.d.(2), 487.e. 487.f. Illustration

SUMMARY OF
RECOMMENDED SEPARATION MINIMA
IN NAUTICAL MILES
FOR VARIOUS AIRCRAFT COMBINATIONS
INVOLVING HSVFR HELICOPTERS

| AIRCRAFT → / COMBINATIONS ↓ | | | HSVFR HELICOPTER | |
|---|---|---|---|---|
| | | | DEPARTURE | ARRIVAL |
| HSVFR HELICOPTER | DEPARTURE | | 1<br>*200 ft. | 1 |
| | ARRIVAL | | 1 | 1 |
| IFR FIXED WING OR IFR HELICOPTER | DEPARTURE | <1 NM BEYOND RUNWAY | * 1/2 | 1/2 |
| | | ≥1 NM BEYOND RUNWAY | 1-1/2, or 1/2* | 1-1/2 |
| | STRAIGHT-IN APPROACH | <1 NM FROM RUNWAY | 1-1/2, or 1/2* | 1/2 |
| | | ≥1 NM FROM RUNWAY | *1 | 1-1/2 |
| | CIRCLING APPROACH | | 1-1/2 | 1-1/2 |

* DIVERGING COURSES ONLY

| EXISTING | PROPOSED |
| --- | --- |
| Page 120<br>822. MINIMA | 822. (no change) |
| Unless a pilot concurs in the use of a lower speed, use the following minima: | |
| a. To aircraft operating between FL 280 and 10,000 feet, a speed not less than 250 knots. | |
| b. To turbojet aircraft operating below 10,000 feet: | |
| (1) A speed not less than 210 knots, except: | |
| (2) Within 20 miles of the airport of intended landing, a speed not less than 170 knots. | |
| c. Propeller aircraft within 20 miles of the airport of intended landing, a speed not less than 150 knots. | |
| d. Departures, a speed not less than 230 knots. | |
| (insert) ← | e. Helicopters flying on instruments, a speed not less than 60 knots. |
| | 822.e. NOTE -Relatively few types of helicopters are certificated for IFR flight at airspeeds below 60 knots, due to control stability problems at lower speeds. Once in the clear, with outside visual reference to the surface, pilots can slow to lower speeds as necessary. |

RATIONALE: See Note 822.e.

SOURCE: HAI Working Group

| EXISTING | PROPOSED |
| --- | --- |
| Page 128 | |
| 962. STOL RUNWAYS | 962. STOL RUNWAYS |
| Use STOL runways as follows: | Use STOL runways as follows: |
| a. A designated STOL runway may be assigned only when requested by the pilot or as specified in a Letter of Agreement with an aircraft operator. | a. A designated STOL runway may be assigned to a fixed-wing aircraft only when requested by the pilot or as specified in a Letter of Agreement with an aircraft operator. |
| | b. A designated STOL runway may be assigned to a helicopter at any time. |
| b. Issue the measured STOL runway length if the pilot requests it. | c. Issue the measured STOL runway length if the pilot requests it. |
| | 962. NOTE -Even though helicopters do not normally require the use of a runway, there is no reason to prohibit them from using a STOL runway because of its limited dimensions. |

---

RATIONALE: See Note 962.

SOURCE: HAI Working Group

## EXISTING

Page 129

**972. TAXI INFORMATION**

When taxi information is required, issue the following, as appropriate, in concise and easy to understand terms:

a. Route for the aircraft to follow on the movement area.

972.a. Note.—Movement of aircraft within loading, maintenance, or parking areas is the responsibility of the pilot, aircraft operator, or airport management.

*Phraseology:*
TAXI:
VIA (route) *or* ON (runway number or taxiway, etc.) *or* TO (location) *or* (direction) *or* ACROSS RUNWAY (runway number).
CONTINUE TAXIING:
VIA (route) *or* ON (runway number or taxiway, etc.) *or* (direction).

972.a. Examples.—
"Turn right at first intersection." "Taxi straight ahead to end of runway, then turn left."

b. Instructions to hold and traffic information as necessary.

972.b. Note.—When authorizing an aircraft to "taxi to" an assigned takeoff runway, the absence of holding instructions authorizes the aircraft to "cross" all runways which the taxi route intersects except the assigned takeoff runway. It does not include authorization to "taxi onto" or "cross" the assigned takeoff runway at any point. In absence of holding instructions, a clearance to "taxi to" any point other than an assigned takeoff runway, is a clearance to cross all taxiways and runways that intersect the taxi route to that point.

*Phraseology:*
HOLD:
SHORT OF (location), *or* ON (taxi strip, run-up pad, etc.), *and if necessary* TRAFFIC (traffic information), *or* FOR (reason).

c. Instructions to expedite a taxiing aircraft.

*Phraseology:*
TAXI WITHOUT DELAY (traffic if necessary).

## PROPOSED

**972 TAXI INFORMATION FOR HELICOPTERS**

When taxi information is required for fixed wing aircraft, issue the following, as appropriate, in concise and easy to understand terms:

a. Route for the aircraft to follow on the movement area.

972.a. Note.—Movement of aircraft within loading, maintenance, or parking areas is the responsibility of the pilot, aircraft operator, or airport management.

*Phraseology:*
TAXI:
VIA (route) *or* ON (runway number or taxiway, etc.) *or* TO (location) *or* (direction) *or* ACROSS RUNWAY (runway number).
CONTINUE TAXIING:
VIA (route) *or* ON (runway number or taxiway, etc.) *or* (direction).

972.a. Examples.—
"Turn right at first intersection." "Taxi straight ahead to end of runway, then turn left."

b. Instructions to hold and traffic information as necessary.

972.b. Note.—When authorizing an aircraft to "taxi to" an assigned takeoff runway, the absence of holding instructions authorizes the aircraft to "cross" all runways which the taxi route intersects except the assigned takeoff runway. It does not include authorization to "taxi onto" or "cross" the assigned takeoff runway at any point. In absence of holding instructions, a clearance to "taxi to" any point other than an assigned takeoff runway, is a clearance to cross all taxiways and runways that intersect the taxi route to that point.

*Phraseology:*
HOLD:
SHORT OF (location), *or* ON (taxi strip, run-up pad, etc.), *and if necessary* TRAFFIC (traffic information), *or* FOR (reason).

c. Instructions to expedite a taxiing aircraft.

*Phraseology:*
TAXI WITHOUT DELAY (traffic if necessary).

**EXISTING**

Page 129

**PROPOSED**

972.d. When necessary to clear a helicopter to ground taxi using wheels, issue instructions using the phraseology in paragraphs a, b, or c above. For helicopters with skid-type landing gear, use paragraph e. below.

972.d. NOTE 1. - Ground taxi uses less fuel and minimizes air turbulence. However, under certain conditions, such as rough/soft/uneven terrain, it may become necessary for a helicopter to air taxi for safety reasons.

972.e. NOTE 2. - The downwash of a hovering helicopter generates strong surface velocities out to a radius of 3 times the rotor diameter. Where possible, this much clearance should be kept between the hovering helicopter and parked light aircraft.

Helicopters with articulated rotor blades (usually 3 or more blades) are subject to ground resonance and may, on rare occasions, suddenly lift off the ground to avoid damage.

972.e. When necessary to clear a helicopter to proceed from one point to another via flight at or below 100 feet AGL, use the appropriate phraseology as follows:

Phraseology:

AIR TAXI
VIA (direct or route prescribed)
TO (location, heliport, helipad, movement/operating areas, inactive/active runway)
CAUTION (wake turbulence, construction equipment)
LAND AND CONTACT TOWER OR HOLD FOR (reason, landing/taxiing aircraft, release, clearance to cross runway, etc.)

972.e. NOTE 1. - The term AIR TAXI authorizes a helicopter to be operated at a speed determined to be safe by the pilot and at an altitude of not more than 100 feet AGL. However, other factors such as snow or blowing dust may cause the pilot to request to air-taxi at a higher altitude. Approval would be based on traffic conditions at the time.

Page 130

| EXISTING | PROPOSED |
| --- | --- |
| | 975. Taxi information for single piloted helicopters -- Issue taxi information to helicopters as in 972 above and if the helicopter requires no further taxi instructions, instruct the pilot to monitor/contact tower on the appropriate frequency. |
| | 975. NOTE.-This procedure enables a single pilot to set his radio before liftoff and thereby avoid having to land before changing to the tower frequency. |
| | 975. Reference - 7110.65 36 |
| | 976-979. RESERVED |

SOURCE: FAA AAT-320

EXISTING

**995. TAKEOFF CLEARANCE**

Issue takeoff clearance.

*Phraseology:*
CLEARED FOR TAKEOFF.

995. Note.—Turbine-powered aircraft may be considered ready for takeoff when they reach the runway, unless they advise otherwise.

*USA/USAF/USN:* Issue surface wind and takeoff clearance to aircraft.

*Phraseology:*
WIND (surface wind in direction and velocity).
CLEARED FOR TAKEOFF.

**996. CANCELLATION OF TAKEOFF CLEARANCE**

Cancel a previously issued clearance for takeoff and inform the pilot of the reason, if circumstances require.

*Phraseology:*
CANCEL TAKEOFF CLEARANCE (reason).

**997-1009. RESERVED**

PROPOSED

(Insert)

996. TAKEOFF CLEARANCE FOR HELICOPTERS

a. Issue takeoff clearance for helicopter, from any point on the airport which is not prohibited from such use, provided the helicopter is visible from the tower. Obtain prior approval of the ground controller when the takeoff point is other than an active runway, heliport, helipad, or designated helicopter departure area.

996.a. NOTE 1 - Whenever possible issue takeoff clearance in lieu of exterded ground or air taxi operations. Helicopters which do not request the use of a runway should not be forced to delay until a takeoff runway is available, if other conditions would permit them to take off on a course which diverges from other traffic.

996.a. NOTE 2 - Most helicopter pilots will not prefer to take off downwind if the wind velocity exceeds 5 knots.

Phraseology:

WIND (direction and velocity)
AIR TAXI TO (point on airport)
HOLD SHORT OF (runway, taxiway, apron, or other point)
(Code name of route if specified in Letter to Airmen)
CLEARED FOR TAKEOFF

b. Issue takeoff approval when a helicopter requests takeoff clearance from:
(1) An area not visible from the tower.
(2) An unlighted area at night.

Phraseology:

NOT IN SIGHT. DEPARTURE AS REQUESTED APPROVED. (wind direction and velocity, if required)

997. (Renumber existing paragraph 996.
998 - 1009 RESERVED (Renumber)

## EXISTING

Page 135

1020. LANDING CLEARANCE

Issue landing clearance. Restate the landing runway whenever there is a possibility of a conflict with another aircraft which is using or is planning to use another runway.

*Phraseology:*

CLEARED TO LAND

*or*

CLEARED TO LAND RUNWAY (designator).

*USA/USAF/USN*

Issue surface wind and landing clearance. Restate the landing runway whenever there is a possibility of a conflict with another aircraft which is using or is planning to use another runway.

*Phraseology:*

WIND (surface wind direction and velocity), CLEARED TO LAND

*or*

WIND (surface wind direction and velocity), CLEARED TO LAND RUNWAY (designator).

1021. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION

When an arriving aircraft reports at a position where he should be seen but has not been visually observed, advise the aircraft as a part of the landing clearance that it is not in sight and restate the landing runway.

## PROPOSED

(Renumber to 1020.a)

(insert)

1020.b. Issue landing clearance for helicopters, to any point on the airport which is not prohibited for such use, provided the landing point is visible from the tower. Obtain prior approval of Ground Controller when landing point will be other than active runway. Include wind direction and velocity if landing will be made downwind.

Phraseology:

1020.c. Issue landing approval when a helicopter requests landing on:
(1) An area not visible from the tower.
(2) An unlighted area at night.

Phraseology:

CLEARED TO LAND (requested landing point) REQUESTED LANDING AREA NOT VISIBLE. LANDING AS REQUESTED APPROVED.

1020.c. NOTE. -Helicopters do not necessarily require a runway for landing. It is usually advantageous to separate helicopter and fixed-wing traffic on different flight paths. Landing as close as practicable to final destination on airport saves time and fuel for helicopters.

SOURCE: FAA AAT-320

| EXISTING | PROPOSED |
|---|---|
| Page 137<br>**1026. CLOSED TRAFFIC**<br>**Approve/disapprove pilot requests to remain in closed traffic for successive operations subject to local traffic conditions.**<br>***Phraseology:***<br>**LEFT/RIGHT (if required) CLOSED TRAFFIC APPROVED. REPORT (position if required)**<br>**or**<br>**UNABLE CLOSED TRAFFIC (additional information as required).** | 1027. HELICOPTER CLOSED TRAFFIC<br><br>a. Approve helicopter closed traffic operations based on takeoff/landing points other than active runways, when use of runways is not desirable due to traffic volume or noise considerations. |
| (insert) | b. Issue sufficient instructions to avoid interference between traffic pattern operations and other traffic movements.<br><br>c. Control, restrict, or cancel operations in helicopter traffic pattern in order to prevent delays to itinerant traffic.<br><br>d. Instruct pilots using the helicopter traffic pattern to maintain visual separation from other helicopters operating in the same pattern.<br><br>1027. NOTE. - Most helicopter cockpits are configured for the pilot to occupy the right seat. This factor makes the use of right-hand patterns preferable in the interests of cockpit visibility. |
| **1027-1039. RESERVED** ← | 1028-1039 RESERVED (renumbered) |

RATIONALE: There is a need to establish procedures for helicopter operations in closed patterns, and to clarify why right hand patterns are preferable for most helicopters.

SOURCE: FAA AAT-320

EXISTING

PROPOSED



## Section 21. STAGE III SERVICE

### 1282. SEPARATION

1282. Note 2.—Stage III separation and sequencing for VFR aircraft is dependent upon radar. When a radar outage occurs, efforts should be made to segregate VFR traffic from the IFR traffic flow.

a. Visual separation, as specified in 490., 796., and 1262.

1282.a. Note.—The provisions of 796.c.(5) are applicable to Stage III operations.

1282.a. Reference.—Glossary (Visual Separation).

b. *500 feet* vertical separation between VFR aircraft and between a VFR and an IFR aircraft.

1282.b. Note.—*500 feet* vertical separation shall not be applied below a heavy jet.

1282.b. Reference.—Minima, 1420.

e. Within 15 miles of the radar antenna, separate helicopters and Category I and II VFR aircraft from:

1282.e. Note.—This procedure DOES NOT apply between IFR aircraft.

1282.e. Reference.—Aircraft Categories, 1110.a. Note.

(1) Other Category I or II VFR/IFR aircraft by a minimum of *1½ miles*.

(2) Category III VFR/IFR aircraft by *1½ miles* only when both aircraft are on parallel courses.

c. Within 15 miles of the radar antenna, separate fixed-wing Category I and II aircraft from:
(1) Other Category I and II fixed-wing VFR/IFR aircraft by a minimum of 1-1/2 miles.
(2) Category III fixed-wing VFR/IFR aircraft by a minimum of 1-1/2 miles only when the aircraft are on non-converging courses.

d. Within 15 miles of the radar antenna, separate helicopters from fixed-wing VFR/IFR aircraft by a minimum of 1-1/2 miles except as specified under paragraph 487 of this manual.

RATIONALE:

1282.c.(2) There appears to be no reason why courses must be parallel as long as they are not converging.

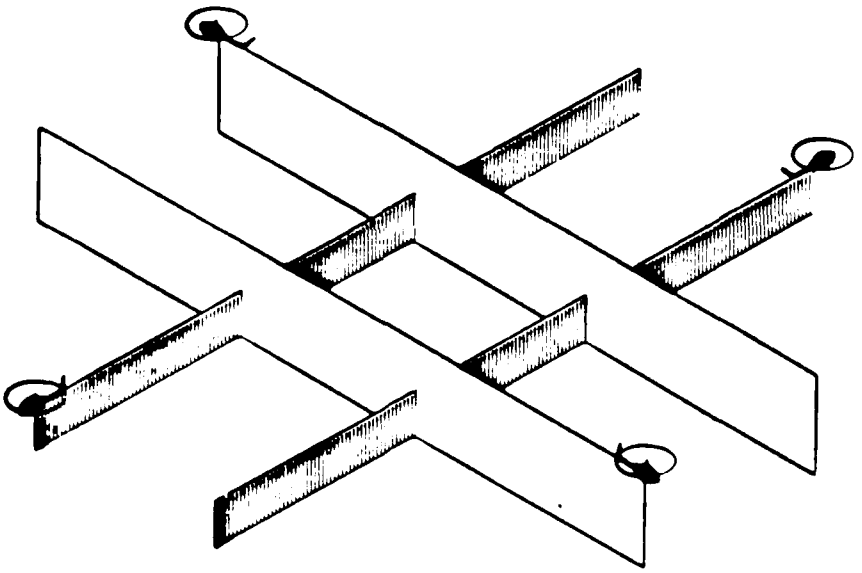
1282.d. The high maneuverability and relatively low speed of helicopters greatly reduces any need for them to stay 3 miles away from a Category III aircraft just because their courses are converging; a 1-1/2 mile minimum appears ample.

SOURCE: FAA AAT-320

## RECOMMENDED CHANGES REQUIRING FURTHER STUDY AND FLIGHT TESTS

The following is a list of items which should be given further study and validation by flight testing, prior to implementation.

Page 42, Para 237, ALTITUDES FOR DUAL ROUTES: In busy helicopter operating areas (primarily offshore), using area navigation with laterally offset parallel routes, it may be advantageous to put opposite-direction routes at the same altitude, with crossing routes at the next level.



RATIONALE: Helicopter altitudes are often limited by icing or traffic considerations. Application of the dual-route intersection concept shown above should simplify AT workload in many cases, by precluding conflictions of crossing traffic as well as opposite-direction traffic. For example, a northbound aircraft would not be concerned with southbound, eastbound, or westbound traffic, but only with overtaking or merging with other northbound traffic. Actually the routes could cross at any angle and still be completely independent in all four directions of traffic flow.

SOURCE: HAI Working Group

Page 53, Para 294, OTHER NAVIGATION SYSTEMS: The Handbook needs to address appropriate separation standards for aircraft using Loran C and perhaps other forms of navigation such as VLF/Omega and eventually Navstar GPS.

RATIONALE: Adequate VOR/TME coverage at helicopter operating altitudes does not exist in much of the offshore airspace and in many parts of the country. It is expected that the use of other types of navigation by IFR helicopters will continue to increase.

SOURCE: HAI Working Group

**Page 113, Para 791, FINAL APPROACH INTERCEPTION: The specified combinations of maximum final approach interception angles and minimum turn-on distances are not necessarily appropriate to helicopters with approach speeds in the neighborhood of 60 knots.**

RATIONALE: To save flight time, fuel, and airspace in the terminal area, helicopters should be allowed to make shorter approaches. This would also tend to increase capacity by reducing the length of the common path where helicopters have to use the same ILS as other aircraft. For any length of final approach, a slower approach speed gives the pilot more time to get stabilized on the localizer course and on the glide slope. Obviously the final approach must still be long enough to allow the pilot to intercept it from the lower side. With a much smaller turning radius the helicopter requires less anticipation to intercept the localizer course; therefore, it appears that larger interception angles should still be satisfactory.

SOURCE: HAI Working Group

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| EXISTING | PROPOSED |
| --- | --- |
| Page 38 | |
| 222. MINIMA BETWEEN ALTITUDES<br><br>Separate IFR aircraft by assigning different altitudes using the following minima between altitudes:<br><br>a. Up to and including FL 290 - 1,000 feet.<br><br>b. Above FL 290 - 2,000 feet. | c. In offshore operations, helicopters at or below 3000 MSL and equipped with radio altimeters may, with pilot concurrence, be separated by a minimum of 500 feet. |

RATIONALE. The use of a non-barometric reference and the absence of terrain obstructions should make this a safe procedure, very useful because of the relatively low range of operating altitudes.

SOURCE: HAI Working Group

| EXISTING | PROPOSED |
| --- | --- |
| Page 48 | |
| 273. SEPARATION BY PILOTS<br><br>When pilots of aircraft on the same course in direct radio communication with each other concur, you may authorize the following aircraft to maintain longitudinal separation of 10 minutes; or 20 miles if they are using DME. | (add to existing sentence)<br><br>; except when the succeeding aircraft maintains a speed which is no faster than the preceding aircraft, and does not exceed 120 knots, a minimum of 10 miles DME separation may be used. |

Phraseology:

MAINTAIN AT LEAST ONE ZERO MINUTES/
TWO ZERO MILES SEPARATION FROM
(Ident).

RATIONALE. The use of 20 miles DME separation produces excessively long intervals between low-speed aircraft, resulting in very low route capacity. The use of 10 miles separation appears generous under the conditions specified above.

SOURCE: HAI Working Group

| EXISTING | PROPOSED |
| --- | --- |
| Page 213 | |
| 1710. LONGITUDINAL SEPARATION | (add to existing sentence) |
| a. Separate aircraft at any altitude using DME by a minimum of 20 miles except that 10 miles may be used when the leading aircraft maintains a speed at least 40 knots faster than the succeeding aircraft. | ; or when the succeeding aircraft maintains a speed no faster than the leading aircraft, and this speed does not exceed 130 knots. |

RATIONALE. The use of 10 miles separation appears safe under the conditions specified (see also proposed paragraph 273).

SOURCE: HAI Working Group

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# APPENDIX

Much effort was spent in collecting and coordinating the material for the recommended changes to the ATC Handbook. Copies of pertinent correspondence and related material are provided in the following section, as an Appendix to this report.

HELICOPTER ASSOCIATION of America

1156 15th St., N.W., Suite 610, Washington, D. C. 20005 (202) 466-2420 Telex 89615

November 14, 1980

Memorandum No. 2

TO: HAA HELICOPTER ATC STUDY WORKING GROUP

FROM: Glen A. Gilbert
HAA Program Manager

1. Enclosed herewith is a paper prepared by the PATCO member of the FAA's Air Traffic Procedures Advisory Committee (ATPAC). (I am a member of this Committee in representation of the HAA.)

2. It would be very useful if members of the Working Group would give this presentation consideration in their review of 7110.65B per my Memorandum No. 1.

3. Also enclosed for your information is the time/phase plan for the conduct of our ATC study as outlined in my Memorandum No. 1.

GAG:md

## STAGE III RADAR SERVICE

Many of you are aware of the ongoing controversy concerning the application of Stage III separation to aircraft operating in the VFR traffic pattern at airports where the pattern lies within Terminal Radar Service Area (TRSA) airspace. For those of you who are not familiar with this controversy, here is some background.

FAA's ATC Operations and Procedures Division (AAT-300) became aware last year of a lack of standardization in this area. Nearly a year ago, FAA Washington sent a team into the field to observe Stage III operations and make recommendations for standardization. Their primary area of interest was to establish whether separation was being provided to VFR aircraft in a closed traffic pattern.

They found that a few facilities were <u>actually</u> providing this so-called service through radar vectoring, sequencing or separation of aircraft each trip around the pattern. Many facilities <u>felt</u> they were providing separation through the use of visual separation. When queried, it turned out that most, if not all, of them were relying on controller applied visual (7110.65B, para. 490a (1) and (2)). They were actually applying para. 980 and/or 906.

The Air Traffic Procedures Advisory Committee (ATPAC), a national level committee with representatives of fourteen avaiation interest groups, including PATCO, discussed the subject in depth

last April. What resulted was a unanimous recommendation that "FAA consider VFR aircraft operating in the closed traffic pattern ...as non-participating aircraft". It is significant that all committee members concurred in this PATCO proposal including representatives of every aspect of general, military and commercial aviation.

At the July ATPAC meeting, FAA rejected the recommendation, reemphasizing their position that all aircraft operating in TRSA airspace shall be separated unless the pilot specifically declines the service. That includes pattern traffic, regardless of whether aircraft are radar identified.

I strongly suggest that controllers at affected locations carefully reevaluate the procedures they use to "separate" VFR pattern traffic. Review the options available in 7110.65B. These options are:

1) Radar separation - para. 1282

   This separation, if used, must be provided on a fully certified radar system, not simply a certified BRITE indicator, by a certified radar controller.

2) Non-radar separation - Chapter 3, Sections 3, 6 and 7

   This is completely unrealistic if you have more than one aircraft in your airspace.

3) Visual separation - para. 490

   Consider this option carefully! If the

pilots involved accept responsibility under the provisions of 490a (1) and (3) all is well, bearing in mind that the pilot must see and maintain visual separation from all aircraft within 1½ miles if all are CAT I or II, or 3 miles if any are CAT III. NOTE: If the controller elects to assume responsibility for visual separation (para. 490 a (1) and (2)), be aware that if, at any time, for any reason, you lose sight of any aircraft involved, you may have had a system error. This could occur with aircraft on extended downwind pattern segments behind the tower, aircraft lost in haze, or controller attention simply diverted by other duties. Also pay close attention to the restrictions on use of visual separation between successive departures. The concept of the BRITE as an "extention of the eyeballs" is not a substitute for "eyeball contact" for the purpose of applying visual separation.

Regardless of the type separation applied, the controller responsible must have specific airspace in which to conduct the operation as well as the ability to assure that his aircraft remain the required distance from the boundary.

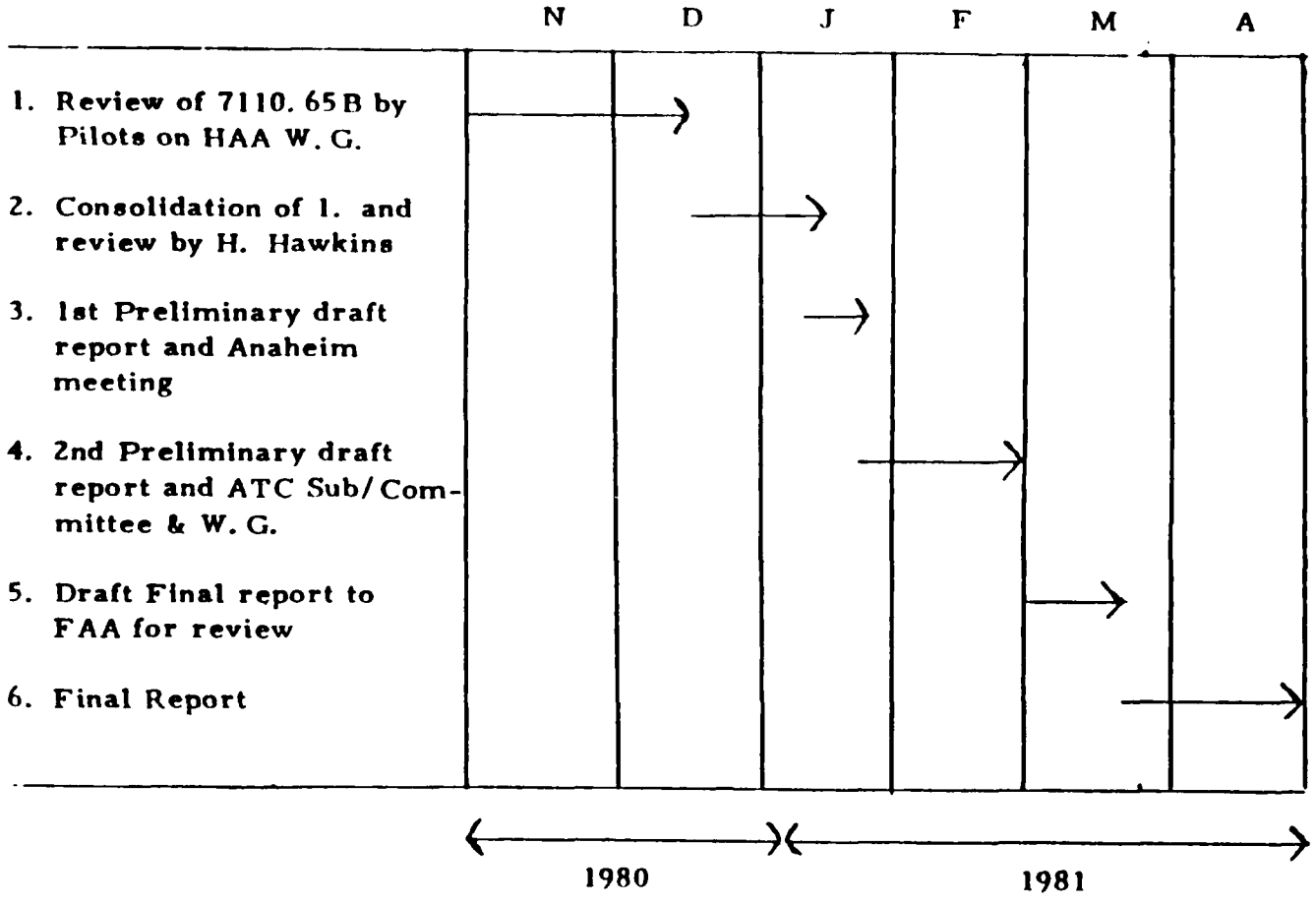
Having grappled with this dilemma for nearly a year, we have concluded that the only way to conduct these operations in accordance with FAA's stated position is by application of radar separation. This will normally require the aircraft to go to departure/arrival radar for sequencing and separation.

The impact this will have on the system at many locations is readily discernable. It seems peculiar that the FAA apparently doesn't share PATCO's concern. The increased delays to both VFR and IFR traffic could result in any of the following situations:

1) Disgruntled pilots could habitually decline Stage III service not only in the pattern, but throughout the system, thereby derogating the effectiveness of the TRSA program.
2) The FAA could modify TRSAs to exclude airport traffic areas or portions thereof, reducing the service to itinerant Stage III traffic, thereby derogating air safety.
3) FAA could eventually realize the validity of the ATPAC position and take actions commensurate with the suggestions of the Committee.

## HELICOPTER ASSOCIATION OF AMERICA

## HAA ATC STUDY TIME/PHASE PLAN




Note: W.G. indicates HAA/FAA ATC Procedural Study Working Group

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HELICOPTER ASSOCIATION of America

1156 15th St., N.W., Suite 610, Washington, D. C. 20005 (202) 466-2420 Telex 89615

November 14, 1980

Memorandum No. 3

TO: HAA HELICOPTER ATC STUDY WORKING GROUP

FROM: Glen A. Gilbert
HAA Program Manager

1. Enclosed herewith for your information is an FAA Proposed Revision to FAAH 7110.65B, 7210.3E P/C Glossary and Airmans Information Manual.

2. I would appreciate it if all members of the Working Group would review this material and let me have any comments no later than December 5.

3. Pilot members will find the enclosure particularly useful in preparing their recommendations on 7110.65B, inasmuch as this is the format (from page 7 on) that we will follow in our study (i.e., Paragraph Number, Old, New, Rationale).

4. Don't forget that the target date for the first cut at the paragraph by paragraph review is December 15 (see item 5, my Memorandum No. 1).

GAG:md
Encl.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

WASHINGTON, D.C. 20591

DATE

IN REPLY REFER TO AAT-330.8

SUBJECT Proposed Revision to FAAH 7110.65B, 7210.3E, P/C Glossary and Airmans Information Manual (AAT-330-80-11)

FROM Acting Chief, En Route Operations and Procedures Branch, AAT-330

TO See Distribution List

I. PARAGRAPH NUMBER AND TITLE:

P/C Glossary

IFR Over the Top
VFR Over the Top
VFR Conditions
VFR On Top/VFR Conditions on Top

AIRMANS INFORMATION MANUAL (AIM):

266. -------- IFR Clearance with VFR Restrictions
271. -------- IFR Separation Standards
298.e. -------- VFR Operations on IFR Flight Plan
341. -------- Position Reporting
342. -------- Additional Reports
346. -------- Operation in Restricted Airspace

FAA 7110.65B

58. --------- VFR Conditions-on-Top
182. --------- Positive Control Area Restrictions
420. --------- Clearance
491. --------- VFR Conditions
492. --------- VFR on Top
493. --------- Altitude for Direction of Flight
630. --------- VFR Operations
794. --------- Arrival Instructions
1461. --------- Avoidance
1713. --------- Visual Separation and VFR

FAA 7210.3E:

622. --------- High Altitude Inspections

II. BACKGROUND/RATIONALE:

A review of FAAH 7110.65B, paragraph 491 (VFR CONDITIONS) and 492 (VFR ON TOP), has revealed some ambiguities and a potential for confusion in the application of the two paragraphs. In this

proposal, we have attempted to clarify intent by revising 7110.65B, 491, 492 and the AIM so that the procedural application and the information in the AIM will answer the following questions:

1Q. May a clearance to operate "VFR ON TOP" or "VFR" be issued when the pilot does not specifically request the clearance?

A. A clearance to operate "VFR ON TOP" shall not be issued unless the pilot specifically requests it. A clearance to operate in "VFR CONDITIONS" may be issued without a pilot request, but only if one of the following conditions exists;

a. A terminal facility determines that there will be noise abatement benefits where part of the IFR departure route does not conform with an FAA approved noise abatement route or altitude.

b. A pilot has requested a practice instrument approach from a terminal facility and he is not on an IFR flight plan.

2Q. Should a "VFR ON TOP" clearance be issued when there is no obscuring meteorological formation (i.e., clouds, smoke, haze, etc.)?

A. No. This clearance should only be issued when a pilot desires to operate in VFR conditions above some kind of obscuration. However, this is a pilot determination and a controller should not question it. Even when the controller is sure that the weather is "clear and fifty", he should still honor a pilot's request to operate "VFR ON TOP." We have attempted to indicate in the AIM that pilots should request "VFR ON TOP" only when they are actually on top of a meteorological formation or when they desire to climb through a meteorological formation and then either maintain VFR ON TOP or cancel their IFR flight plan. Otherwise, pilots should fulfill their desire to operate in VFR conditions by specifically requesting a clearance to operate in "VFR CONDITIONS" instead of "VFR ON TOP." However, we reiterate that this is a pilot determination and it should not be questioned by controllers.

3Q. May a pilot operate "VFR ON TOP"

a. Between layers or;

b. Below a layer?

3

A. a. Yes. Remember that the pilot should be operating above some obscuring formation but there is nothing intended to preclude operation above one layer and below another. The basic requirements are that the pilot fly at the appropriate VFR altitudes as prescribed in FAR 91.109 and comply with the VFR visibility and distance from cloud criteria in FAR 91.105.

b. Normally, pilots should not operate VFR ON TOP beneath a layer. The appropriate request and clearance in this situation would be to "MAINTAIN VFR CONDITIONS." However, a pilot operating correctly VFR ON TOP of a meteorological formation could overfly the formation to a point where it ended and then find himself operating either in the clear (no obscuring conditions) or beneath a layer. In this situation, he could continue to operate on his VFR ON TOP clearance. We do not intend to draw such a fine technical distinction between "VFR ON TOP" and "VFR CONDITIONS" so as to preclude this type of operation or to require pilots to request amended clearances (i.e., requesting a change from a VFR ON TOP to a VFR CONDITIONS clearance). We believe that requring VFR ON TOP pilots (who find that they are no larger operating above a meteorological formation) to request an amended clearance to "VFR CONDITIONS," would unnecessarily complicate the procedure and would provide no operational benefit. Conversely, a pilot operating on a "VFR CONDITION" clearance need not request an amended clearance (i.e., VFR ON TOP) when he finds himself operating above a meteorological formation.

Where the reasons for the change cannot be determined from the BACKGROUND or are not readily apparent, we have attempted to explain them in a "rationale" paragraph following the revision.

III. CHANGE:

AIRMANS INFORMATION MANUAL

P/C GLOSSARY

| OLD | NEW |
|---|---|
| IFR OVER THE TOP - The operation of an aircraft over the top on a IFR flight plan when cleared by air traffic control to maintain "VFR CONDITIONS" or "VFR CONDITIONS ON TOP." (See VFR ON TOP) | Delete |

4

| OLD | NEW |
|---|---|
| VFR OVER THE TOP - The operation of an aircraft above the clouds under VFR when it is not being operated on an IFR flight plan. (See VFR ON TOP) | Delete |

Rationale:

While these terms appear in some FAR's (e.g., FAR 121), they are not used in pilot/controller communications nor do they normally exist in the ATC lexicon. Their appearance in the glossary complicates matters by implying that they are used and invites unnecessary comparison with "VFR ON TOP", "VFR CONDITIONS," etc.

---

| OLD | NEW |
|---|---|
| None | VFR CONDITIONS - ATC authorization for an IFR aircraft operating in VFR conditions, a VFR TCA or Stage III aircraft or a VFR aircraft requesting a practice instrument approach, to be flown at the pilots choice of an appropriate VFR altitude as specified in FAR 91. A pilot receiving this authorization must comply with the VFR visibility, distance from cloud criteria and the minimum IFR altitudes specified in FAR 91. |

Rationale:

Since "VFR CONDITIONS" is used in the revised 7110.65B, 491, and since "VFR ON TOP" and "VFR CONDITIONS" have different procedural applications, the term should be defined in the P/C Glossary.

---

| OLD | NEW |
|---|---|
| VFR ON TOP/VFR CONDITIONS ON TOP - An IFR clearance term used in lieu of a specific altitude assignment upon pilot's request which authorizes the aircraft to be flown in VFR weather conditions at an appropriate VFR altitude which is not below the minimum IFR altitude (Refer to FAR Part 91). | VFR ON TOP - ATC authorization for an IFR aircraft to operate in VFR weather conditions above a meteorological formation (i.e., coulds, smoke, haze, etc.) at the pilot's choice of an appropriate VFR altitude as specified in FAR 91. A pilot receiving this authorization must comply with the VFR visibility, distance from cloud criteria and the minimum IFR altitudes specified in FAR 91. |

5

Rationale:

1. It is unnecessary to use two terms (i.e., VFR ON TOP/VFR CONDITIONS ON TOP) to describe the same procedure. Therefore, in the interest of simplification, VFR CONDITIONS ON TOP has been deleted.

2. Since the term is used to authorize flight above some form of obscuring layer, the definition was revised to clearly state that provision. Additionally, including some of the pilot's basic responsibilities makes the definition clearer and more precise.

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Paragraph 266

| OLD | NEW |
|---|---|
| 266. IFR CLEARANCE WITH VFR RESTRICTIONS | 266. IFR CLEARANCE WITH VFR ON TOP/VFR CONDITION RESTRICTIONS |
| a. ATC will not issue a clearance to an IFR flight specifying that climb descent, or any portion of the flight be conducted in VFR condition unless one of the following exists. | a. A pilot on an IFR flight plan operating in VFR weather conditions, on top of a cloud, haze, smoke or other meteorological formation may request VFR ON TOP in lieu of an assigned altitude. This would permit the pilot to select an altitude or flight level of his choice. |
| (1) The pilot requests the VFR restriction. | |
| (2) For noise abatement benefits where part of the IFR departure route does not conform with an FAA approved noise abatement route or altitude. | |
| b. If a pilot is operating on an IFR flight plan and is given a VFR restriction, ATC will not apply IFR separation during the "VFR Restriction" portion of the flight. | b. Pilots desiring to climb through a cloud, haze, smoke or other meteorological formation and then either cancel their IFR flight plan or operate VFR ON TOP may request a climb to VFR ON TOP. The ATC authorization shall contain a request to report reaching VFR ON TOP, a top report or a statement that no top report is available. Additionally, the ATC authorization may contain a clearance limit, routing and an alternative clearance if VFR ON TOP is not reached by a specified altitude. |
| c. If after receiving a VFR restriction the pilot determines that compliance with the clearance is not feasible, the pilot shall maintain VFR and request an amended clearance. | c. A pilot on an IFR flight plan, operating in VFR conditions, may request to climb/descend in, or to maintain VFR conditions. |

OLD

NEW

d. ATC may not authorize VFR ON TOP/VFR CONDITIONS operations unless the pilot requests the VFR operation or a clearance to operate in VFR CONDITIONS will result in noise abatement benefits where part of the IFR departure route does not conform to an FAA approved noise abatement route or altitude.

e. When operating in VFR conditions with an ATC authorization to "MAINTAIN VFR ON TOP/ MAINTAIN VFR CONDITIONS pilots should:

(1) Fly at the appropriate VFR altitude as prescribed in FAR 91.109.

(2) Comply with the VFR visibility and distance from cloud criteria in FAR 91.105 (BASIC VFR WEATHER MINIMUMS).

(3) Comply with instrument flight rules that are applicable to his flight (i.e., minimum IFR altitudes, position reporting, radio communications, course to be flown, adherence to ATC clearance, etc.).

f. ATC authorization to "MAINTAIN VFR ON TOP" does not preclude operation on top of one meteorological formation and beneath another (i.e., between layers). The only requisite is that, at the time the initial clearance was issued, the pilot was either operating in VFR conditions above a meteorological formation or was requesting a clearance to climb through and operate in VFR conditions above a meteorological formation. If a pilot desires to operate in VFR conditions on an IFR flight plan, and no meteorological formation (i.e., clouds, smoke, haze, etc.) is present or he wishes to operate below

7

OLD

NEW

the formation, he should request ATC authorization to operate in "VFR CONDITIONS." It is imperative that pilots understand that clearance to operate "VFR ON TOP/ VFR CONDITIONS" does not imply cancellation of the IFR flight plan.

g. Pilots operating VFR ON TOP/VFR CONDITIONS, may receive traffic information, from ATC, on other pertinent IFR or VFR aircraft. However, separation will not be provided unless the pilot is operating in a TCA or participating in Stage III service.

Note. - When operating in VFR weather conditions, it is the pilot's responsibility to be vigilant so as to see and avoid other aircraft.

h. ATC will not authorize VFR ON TOP or VFR CONDITIONS operations in positive control areas (PCA). (See paragraph 93 - Positive Control Area)

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Paragraph 271.b.

OLD

b. Standard separation will be provided between all aircraft operating on IFR flight plans except when "VFR CONDITIONS-ON-TOP" has been requested by a pilot and authorized by ATC in lieu of a specific cruising or holding altitude or when clearances specifying that climb or descnt or any portion of the flight shall be conducted in "VFR CONDITIONS" are issued. A pilot may specifically request IFR separation while conducting a practice instrument approach.

NEW

b. Separation will be provided between all aircraft operating on IFR flight plans except during that part of the flight (outside of a TCA or TRSA) being conducted on a VFR ON TOP/ VFR CONDITIONS clearance. Under these conditions, ATC may issue traffic advisories but it is the sole responsibility of the pilot to be vigilant so as to see and avoid other aircraft.

8

Rationale:

1. "VFR CONDITIONS-ON-TOP" changed to "VFR-ON-TOP" to comply with procedural change in terminology in FAAH 7110.65B.

2. Nonpertinent material deleted and the paragraph revised to clearly indicate ATC/pilot's roles in terms of separation responsibility.

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Paragraph 298.e.

VFR OPERATIONS ON IFR FLIGHT PLAN

Delete the entire subparagraph and relocate the information to paragraph 266.

Rationale:

Paragraph 298 deals with the mechanics involved in filing an IFR flight plan while paragraph 298.e. contains information concerning ATC clearances/instructions involving VFR restrictions. Therefore, we believe that the information should be relocated in the section of the AIM that deals specifically with ATC clearances (i.e., Section 4, paragraph 266).

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Paragraph 341

POSITION REPORTING

In paragraphs 341.c.(1),(2); d.(1)(d), change "VFR CONDITIONS ON TOP" to "VFR ON TOP/VFR CONDITIONS."

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Paragraph 342

ADDITIONAL REPORTS

In paragraph 342.a.(1)(b), change "VFR CONDITIONS ON TOP" to "VFR ON TOP/VFR CONDITIONS."

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Paragraph 346

OPERATION IN RESTRICTED AIRSPACE

In paragraph 346.a., change "VFR CONDITIONS ON TOP" to "VFR ON TOP/VFR CONDITIONS."

FAA HANDBOOK 7110.65B

Paragraph 58

| OLD | NEW |
|---|---|
| 58. VFR CONDITIONS-ON-TOP | 58. VFR ON TOP/VFR CONDITIONS |
| Use a route not meeting service volume limitations only if an aircraft requests to operate in VFR conditions-on-top on this route. | Use a route not meeting service volume limitations only if an aircraft requests and is cleared to maintain VFR ON TOP/VFR CONDITIONS, on the route. |
| 58. Note. - Aircraft equipped with TACAN-only are expected to: | 58. Note. - Aircraft equipped with TACAN only are expected to: |
| a. Define route of flight between TACAN or VORTAC NAVAIDs in the same manner as VOR equipped aircraft. | a. Define route of flight between TACAN or VORTAC NAVAIDs in the same manner as VOR equipped aircraft. |
| b. Except in positive control areas, submit requests for flight in VFR conditions-on-top where insufficient TACAN or VORTAC NAVAIDs exist to define the route. | b. Except in positive control areas, submit requests to operate "VFR ON TOP"/VFR CONDITIONS" where insufficient TACAN or VORTAC NAVAIDs exist to define the route. |

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Paragraph 182

| OLD | NEW |
|---|---|
| 182. POSITIVE CONTROL AREA RESTRICTIONS | 182. POSITIVE CONTROL AREA RESTRICTIONS |
| Do not apply visual separation or issue VFR or VFR conditions-on-top clearances in positive control areas. | Do not apply visual separation or authorize VFR ON TOP/VFR CONDITION operations in positive control areas (PCA). |

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Paragraph 420

| OLD | NEW |
|---|---|
| 420. CLEARANCE | |
| a. . . . . | No change |
| b. . . . . | No change |
| 420.b.(2) Example. | No change |
| 420.b.(2) Note 1. | No change |

| OLD | NEW |
|---|---|
| 420.b.(2) Note. 2 - If the altitude assignment is VFR-ON-TOP, it is conceivable that the pilot may elect to remain high until arrival over the final approach fix which may require the pilot to circle to descend so as to cross the final approach fix at an altitude that would permit landing. | 420.b.(2) Note. 2 - If the altitude assignment is VFR ON TOP/VFR CONDITIONS, it is conceivable that the pilot may elect to remain high until arrival over the final approach fix which may require the pilot to circle to descend so as to cross the final approach fix at an altitude that would permit landing. |

---

Paragraph 491 and 492

| OLD | NEW |
|---|---|
| 491. VFR CONDITIONS | 491. VFR ON TOP/VFR CONDITIONS |
| a. You may clear aircraft to maintain VFR conditions if one of the following conditions exists: | a. You may clear an aircraft, operating in VFR weather conditions on top of a cloud, haze, smoke or other meteorological formation, to maintain "VFR ON TOP", if the pilot requests the clearance. |
| (1) The pilot has requested the clearance. | Phraseology: |
| (2) TERMINAL: The clearance will result in noise abatement benefits where part of the IFR departure route does not conform to an FAA-approved noise abatement route or altitude. | MAINTAIN VFR ON TOP |
| (3) TERMINAL: The pilot has requested a practice instrument approach and is not on an IFR flight plan. | b. You may clear an aircraft to climb through clouds, smoke, haze or other meteorological formations and then to maintain "VFR ON TOP" if the following conditions are met: |
| Phraseology: | (1) The pilots requests the clearance. |
| MAINTAIN VFR UNTIL (time or fix).<br>CLIMB/DESCEND VFR:<br>BETWEEN (altitude) AND (altitude),<br>or,<br>ABOVE/BELOW (altitude). | (2) You inform the pilot of the reported height of the tops of the meteorological formation, or; |
| 491a(3) Reference. - Practice Approaches, 435. | (3) You inform the pilot that no top report is available. |
| b. Issue an alternative clearance when there is reason to believe that flight in VFR conditions may become impracticable. | (4) When necessary, you insure separation from all other traffic for which you have separation responsibility by issuing an alternative clearance. |
| | (5) When an aircraft is climbing to and reports reaching VFR ON TOP reclear the aircraft to maintain VFR ON TOP. |

OLD

Phraseology:

IF NOT POSSIBLE (alternative procedure) AND ADVISE.

492. VFR ON TOP

a. You may clear an aircraft to maintain VFR conditions-on-top of a cloud, haze, smoke, or other meteorological formation if the following conditions are met:

(1) The pilot requests the clearance.

492a(1) Note. - Requests which include a filed flight plan altitude of OTP indicate that the flight intends to operate only at altitudes in airspace where OTP is permitted.

492a(1) Reference. - Positive Control Area Restrictions, 182.

(2) You inform the pilot of the reported height of the tops of the meteorological formation.

Phraseology:

MAINTAIN VFR ON TOP, TOPS REPORTED (altitude).

(3) You inform the pilot accordingly if no top report is available.

Phraseology:

MAINTAIN VFR ON TOP. NO TOPS REPORTED.

(4) If the aircraft's route, track, or altitude may cause it to enter an active Prohibited/ Restricted/Warning Area, MOA, or ATCAA, you:

492a(4) Reference. - Special Use and ATC Assigned Airspace, Chapter

NEW

Phraseology:

CLIMB TO AND REPORT REACHING VFR ON TOP
and, if required
TOPS REPORTED (altitude)
or,
NO TOPS REPORTS

IF NOT ON TOP AT (altitude) MAINTAIN (altitude) and ADVISE.

MAINTAIN VFR ON TOP

c. Do not clear an aircraft to maintain VFR ON TOP/VFR CONDITIONS BETWEEN sunset and sunrise to separate holding aircraft from each other or from en route aircraft, unless restrictions are applied to insure the appropriate IFR vertical separation.

Phraseology:

MAINTAIN VFR ON TOP/VFR CONDITIONS AT OR ABOVE/BELOW/BETWEEN (altitudes).

491c Examples. - "MAINTAIN VFR ON TOP at or above one three thousand five hundred."

"Maintain VFR conditions at or below one two thousand five hundred."

"Maintain VFR conditions between six thousand and one zero thousand."

d. You may clear an aircraft operating in VFR conditions, to climb/descend in, or to maintain VFR conditions when the conditions in 491a and b do not apply and one of the following conditions exist;

(1) The pilot requests the clearance.

(2) TERMINAL: The clearance will result in noise abatement benefits where part of the IFR departure route does not conform with an FAA approved noise abatement route or altitude.

OLD

(a) Inform the pilot to conduct flight in VFR conditions on top, at least 500 feet (FL 290 and above - 1,000 feet) above the upper limit or below the lower limit of the airspace (subject to 493); or

Phraseology:

MAINTAIN VFR CONDITIONS-ON-TOP AT LEAST 500 FEET (FL 290 and above - 1,000 FEET) ABOVE/BELOW (upper limit/lower limit of airspace) ACROSS (name or number of airspace) BETWEEN (fix) and (fix);
and, if the airspace is an ATCAA, (Name of ATCAA) IS ATC ASSIGNED AIRSPACE.

(b) Clear the aircraft via routing which provides approved separation from the airspace.

(c) Exception. Some Prohibited/Restricted Areas are established for security reasons or to contain hazardous activities not involving aircraft operations. The addition of 500 (or 1,000) feet to the upper/lower limit of these Prohibited/Restricted Areas is not required, if the areas have been identified by facility management.

492a(4)(c) Reference. - Handbook 7210.3-214.

b. When tops are not reported, take the following action:

(1) Issue an alternative clearance.

Phraseology:

IF NOT ON TOP AT (altitude), MAINTAIN (altitude) AND ADVISE. REPORT REACHING VFR ON TOP.

NEW

(3) TERMINAL: The pilot has requested a practice instrument approach and is not on an IFR flight plan.

Phraseology:

MAINTAIN VFR CONDITIONS
MAINTAIN VFR CONDITIONS UNTIL (time or fix).
MAINTAIN VFR CONDITIONS ABOVE/BELOW (altitude), CLIMB/DESCEND VFR; and, if required,
BETWEEN (altitude) AND (altitude)
or,
ABOVE/BELOW (altitude).

491d(3) Reference. - Practice Approaches, 435

e. When, in your judgment, their is reason to believe that flight in VFR conditions may become impractical, issue an alternative clearance which will insure separation from all other aircraft for which you have separation responsibility.

Phraseology:

IF UNABLE (alternative procedure) AND ADVISE.

f. If the aircraft's route, track, or altitude may cause it to enter an active Prohibited/Restricted/Warning Area, MOA, or ATCAA;

491f Reference. - Special Use and ATC Assigned Airspace, Chapter 7, Section 2.

(1) Inform the pilot to conduct flight VFR ON TOP/VFR CONDITIONS at least 500 feet (FL 290 and above - 1,000 feet) above the upper limit or below the lower limit of the airspace (subject to 492); or

| OLD | NEW |
| --- | --- |
| (2) When the pilot reports reaching VFR conditions on top, cancel the alternative clearance by reclearing the aircraft to maintain VFR conditions on top.<br><br>Phraseology:<br><br>MAINTAIN VFR ON TOP.<br><br>c. Do not clear an aircraft to maintain VFR conditions on top when a pilot report indicates weather conditions are not suitable or between sunset and sunrise to separate holding aircraft from each other. | Phraseology:<br><br>MAINTAIN VFR ON TOP/VFR AT LEAST 500 FEET (FL 290 and above - 1,000 feet) ABOVE/BELOW (upper limit/lower limit of airspace) ACROSS (name or number of airspace BETWEEN (fix) and (fix); and, if the airspace is an ATCAA, (Name of ATCAA) IS ATC ASSIGNED AIRSPACE.<br><br>(2) Clear the aircraft via routing which provides approved separation from the airspace.<br><br>(3) Exception. Some Prohibited/Restricted Areas are established for security reasons or to contain hazardous activities not involving aircraft operations. The addition of 500 (or 1,000) feet to the upper/lower limit of these Prohibited/Restricted Areas is not required, if the areas have been identified by facility management.<br><br>491f(3) Reference. - Handbook 7210.3-214 |

Rationale:

1. The rationale for the changes to old paragraph 491a and b is contained in paragraph II of this proposal.

2. The requirement in the old 492c that prohibits controllers from is issuing VFR restrictions when a pilot report indicates that weather conditions are not suitable, was deleted. The determination that weather considerations are suitable for VFR ON TOP/VFR CONDITIONS operations is solely the responsibility of the requesting pilot and it is his decision. Refusal to issue the clearance based on a report from another pilot would be tantamount to questionning the judgment of the requesting pilot. Furthermore, one pilot may be operating legally in VFR conditions while another pilot a few miles away might correctly evaluate the weather conditions as being unsuitable. However, conflicting reports of this kind could cause a controller to issue an alternative clearance as indicated in the new paragraph 491e.

## Paragraph 493

| OLD | NEW |
|---|---|
| 493. ALTITUDE FOR DIRECTION OF FLIGHT | 492. ALTITUDE FOR DIRECTION OF FLIGHT |
| Inform an aircraft of the correct altitude for direction of flight when a report from an aircraft maintaining VFR conditions-on-top indicates it is not complying with FAR 91. | Inform an aircraft, maintaining VFR ON TOP or VFR CONDITIONS when a report indicates the pilot is not complying with FAR 91.109. |
| 493. Note. - As required by FAR 91, the appropriate VFR altitudes for direction of flight are as follows: | 492. Note. - As required by FAR 91.109, the appropriate VFR altitudes for aircraft (not in a holding pattern of 2 minutes or less, or turning) operating more than 3,000 feet above the surface to and including FL 290; |
| Flights on Magnetic Courses 0 - 179 | Magnetic courses 0 - 179 - Odd cardinal altitudes plus 500 feet (e.g., 3,500, 5,500, FL 195, 275). |
| 3,000 feet above the surface to but not including FL 290: "odd" cardinal altitudes plus 500 feet. Examples: 3,500,5,500, FL 255, FL 275. | |
| FL 290 and above 4,000 foot intervals beginning with FL 300. Examples: FL 300, FL 340. | Magnetic courses 180 - 359 - Even cardinal altitudes plus 500 feet (e.g., 4,500, 8,500, FL 205, 285). |
| Flights on Magnetic Courses 180 - 359 | Above FL 290; |
| 3,000 feet above the surface up to but not including FL 290: "even" cardinal altitudes plus 500 feet. Examples: 4,500, 6,500, FL 265, FL 285. | Magnetic courses 0 - 179 - 4,000 foot intervals beginning with FL 300 (e.g., FL 300, 340, 380). |
| FL 290 and above: 4,000 foot intervals beginning with FL 320. Examples: FL 320, FL 360. | Magnetic courses 180 - 359 - 4,000 foot intervals beginning with FL 320 (e.g., 320, 360, 400). |
| Phraseology: | Phraseology: |
| VFR ON TOP CRUISING LEVELS FOR YOUR DIRECTION OF FLIGHT ARE:<br>From 3,000 feet above the surface to but not including FL 290<br>ODD/EVEN ALTITUDES/FLIGHT LEVELS PLUS FIVE HUNDRED FEET.<br>At or above FL 290<br>FOUR THOUSAND FOOT INTERVALS BEGINNING AT FLIGHT LEVEL THREE ZERO ZERO/THREE TWO ZERO. | VFR ON TOP/VFR CONDITIONS CRUISING LEVELS FOR YOUR DIRECTION OF FLIGHT ARE:<br>More than 3,000 feet above the surface to FL 290<br>ODD/EVEN ALTITUDES/FLIGHT LEVELS PLUS FIVE HUNDRED FEET.<br>above FL 290<br>FOUR THOUSAND FOOT INTERVALS BEGINNING AT FLIGHT LEVEL THREE ZERO ZERO/THREE TWO ZERO. |

15

Rationale:

The altitude stratification in the note to the old paragraph 493 is incorrectly stated as; "3000 feet above the surface to but not including FL 290." FAR 91.109 indicates that the correct altitude breakdown should be: "more than 3,000 feet above the surface. . . to flight level 290 (inclusive)." Additionally, the note was editorially revised in an attempt to make it clearer.

| | |
|---|---|
| 494-599. RESERVED | 493-599 RESERVED |

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Paragraph 630

| OLD | NEW |
|---|---|
| 630. VFR CONDITIONS | 630. VFR CONDITIONS |
| a. Provided the aircraft is within your area of responsibility or prior coordination has been effected with the facility in whose area an aircraft is operating and an operational benefit will be gained, assign aircraft operating with a clearance specifying VFR conditions-on-top, or VFR aircraft receiving radar advisories, an appropriate Function Code or computer assigned code for the code environment in which you are providing service. | a. Provided the aircraft is within your area of responsibility or prior coordination has been effected with the facility/sector in whose area an aircraft is operating and an operational benefit will be gained, assign aircraft operating with a clearance specifying VFR ON TOP/VFR CONDITIONS, or VFR aircraft receiving radar advisories, an appropriate Function Code or computer assigned code for the code environment in which you are providing service. |
| b. . . . . | No change. |

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Paragraph 794

| OLD | NEW |
|---|---|
| 794. ARRIVAL INSTRUCTIONS | |
| a. . . . . | No change. |
| b. . . . . | No change. |
| c. . . . . | No change. |
| 794c(2) Examples 1 and 2 | No change. |
| 794c(2) Note. 1 | No change |
| 794c(2) Note. 2 - If the altitude assignment is VFR ON TOP, it is conceivable that the pilot may elect to remain high until arrival over | 794c(2) Note. 2 - If the altitude assignment is VFR ON TOP/VFR CONDITIONS, it is conceivable that the pilot may elect to remain high |

| | |
|---|---|
| the final approach fix which may require the pilot to circle to descend so as to cross the final approach fix at an altitude that would permit landing. | until arrival over the final approach fix which may require the pilot to circle to descend so as to cross the final approach fix at an altitude that would permit landing. |
| d. . . . . | No change. |

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Paragraph 1461

| OLD | NEW |
|---|---|
| 1461a and b Reference - Separation from Special Use and ATC Assigned Airspace, 224 and 285; VFR ON TOP, 492; Adjacent Airspace, 750. | 1461a and b Reference - Separation from Special Use and ATC Assigned Airspace, 224 and 285; VFR ON TOP/VFR CONDITIONS, 491; Adjacent Airspace 750. |

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Paragraph 1713

| OLD | NEW |
|---|---|
| 1713. VISUAL SEPARATION AND VFR | 1713. VISUAL SEPARATION AND VFR |
| An aircraft may be cleared to maintain "1,000 feet on top" (in lieu of VFR CONDITIONS-ON-TOP) or may be issued VFR separation when requested by the pilot except: | An aircraft may be cleared to maintain "1,000 feet on top" (in lieu of VFR ON TOP/VFR CONDITIONS) or may be issued VFR separation when requested by the pilot except: |
| 1713. Reference. - VFR CONDITIONS, 491. VFR ON TOP, 492. | 1713. Reference. - VFR ON TOP/VFR CONDITIONS, 491. |
| a. through c. | No change. |

FAA HANDBOOK 7210.3E

| OLD | NEW |
| --- | --- |
| 622. HIGH ALTITUDE INSPECTIONS | 622. HIGH ALTITUDE INSPECTIONS |
| a. High altitude flight inspection operations are generally conducted on IFR flight plans; VFR conditions on top will not be requested except when weather conditions are ideal and excessive delays would result from operating at an assigned flight level. | a. High altitude flight inspection operations are generally conducted on IFR flight plans; VFR ON TOP/VFR CONDITIONS will not be requested except when weather conditions are ideal and excessive delays would result from operating at an assigned flight level. |

IV. IN REPLY REFER TO: AAT-330-80-11. If you have any questions or wish to discuss this proprosal, please contact the En Route Operations and Procedures Branch, Ed Forsythe, AAT-330.8, FTS/426-8630. Comments received on or before December 31 will be thoroughly considered prior to final action regarding the change.

Richard B. Shingler

for BAYSIL B. WARD

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November 17, 1980

Memorandum No. 4

TO: HAA HELICOPTER ATC STUDY WORKING GROUP

FROM: Glen A. Gilbert
HAA Program Manager

1. Enclosed herewith are excerpts from FAA Roport No. FAA-RD-80-88, II, dated November 1980. (ATC Training Manual).

2. Pilot members of the Working Group are asked particularly to consider the material dealing with HSVFR in their review of 7110.65B.

GAG:md
Encl.

## HELICOPTER CONTROL PROCEDURES

### Terminal Procedures

The design of helicopter IFR arrival and departure procedures is governed by the obstruction criteria in TERPS (Terminal Instrument Procedures). Some changes in these criteria are expected during the next year, in order to take advantage of the unique flight characteristics of the helicopter.

### HSVFR

One procedure for expediting helicopter traffic in IMC (Instrument Meteorological Conditions) is the use of HSVFR (Helicopter Special VFR) procedures, which are covered in Section 14, Paragraphs 1140-1141 of Air Traffic Control Handbook 7110.65B.

Some towers have refused to permit HSVFR procedures. It is possible that the wording of Paragraph 1141 has led some facility chiefs to believe that a Letter of Agreement is required before any HSVFR operations can be approved. Such was not the intent of the wording.

It is also possible that the sheer complexity of the HSVFR rules, with their many qualifying restrictions, has discouraged many controllers from memorizing them. Without familiarity, controllers hesitate to apply these rules.

It appears possible that a more simplified presentation, to supplement the existing material in 7110.65B, would at least make the applicable rule easier to find and remember. To this end, a matrix has been prepared which shows the applicable reference for each of the various arrival/departure combinations involving HSVFR operation. This matrix is shown in Table 4-1. Example A in this table shows that the required separation for the combination of an HSVFR helicopter arrival and an IFR fixed-wing arrival which is making a straight-in approach and is more than 1 NM from the runway, is covered by Paragraph 1141 b (1).

**TABLE 4-1**

**APPLICABLE PARAGRAPH REFERENCES**
**IN ATC HANDBOOK 7110.65B**
**COVERING SEPARATION MINIMA FOR**
**HSVFR HELICOPTER OPERATIONS**

| AIRCRAFT → / COMBINATIONS ↓ | | | HSVFR HELICOPTER | |
|---|---|---|---|---|
| | | | DEPARTURE | ARRIVAL |
| HSVFR HELICOPTER | DEPARTURE | | 1141a | 1141a |
| | ARRIVAL | | 1141a | 1141a |
| IFR FIXED-WING | DEPARTURE | <1/2 NM BEYOND RUNWAY | 1141e | 1141d (1) |
| | | ≥1/2 NM BEYOND RUNWAY | 1141e | 1141d (2) |
| | STRAIGHT-IN APPROACH | <1 NM FROM RUNWAY | 1141f | 1141b (1) ← Example A |
| | | ≥1 NM FROM RUNWAY | 1141f | 1141b (2) |
| | CIRCLING OR MISSED APPROACH | | NOT AUTHORIZED | 1141c |

From Table 4-1, a second table (4-2) has been prepared, which lists the actual separation standard for each aircraft combination. Thus the HSVFR criteria can be summarized in a chart small enough to be posted at the local control position in the control tower.

The chief difference between helicopter operational characteristics in IFR and HSVFR is that, in low visibility conditions, the HSVFR pilot will be able to fly at much lower airspeeds (if necessary), than he would normally care to fly if he were actually on instruments. However, in order to stay out of the low-speed Avoid area, he normally will not want to fly slower than 40 knots through the critical altitudes of the Height/Velocity Diagram (see Figure 2-3 of Section 2).

The safety of simultaneous HSVFR arrivals with fixed-wing IFR arrivals, on laterally converging courses, ultimately depends on positive controller/pilot communications, plus the assurance that ATC can control the path or progress of the helicopter as necessary to maintain the necessary seperation from the other aircraft.

This assurance is enhanced if the controller can observe the progress of the helicopter on a radar display. If this is not possible, assurance could be enhanced if the helicopter pilot were navigating visually on a standard VFR helicopter route which is known to both pilot and controller, is clear of fixed-wing traffic paths, and includes one or more distinctive visual landmarks which can be used as standard reporting points and visual holding points.

Techniques for delaying the helicopter to provide separation from other traffic include speed reduction, holding patterns, 360° turns, and path-stretching (radar vectoring). At low helicopter airspeeds, holding patterns and 360° turns require only a small amount of airspace. The helicopter should not be asked to hover for delay purposes. Hovering requires high power with relatively high fuel consumption.

**TABLE 4-2**

**SUMMARY OF SEPARATION MINIMA**
**IN NAUTICAL MILES**
**FOR VARIOUS AIRCRAFT COMBINATIONS**
**INVOLVING HSVFR HELICOPTERS**

| AIRCRAFT → / COMBINATIONS ↓ | | | HSVFR HELICOPTER | |
|---|---|---|---|---|
| | | | DEPARTURE | ARRIVAL |
| HSVFR HELICOPTER | DEPARTURE | | 1<br>*200 ft. | 1 |
| | ARRIVAL | | 1 | 1 |
| IFR FIXED-WING | DEPARTURE | <1/2 NM BEYOND RUNWAY | * 1/2 | 1/2 |
| | | ≥1/2 NM BEYOND RUNWAY | * 1/2 | 2 |
| | STRAIGHT-IN APPROACH | <1 NM FROM RUNWAY | NOT AUTHORIZED | 1/2 |
| | | ≥1 NM FROM RUNWAY | *1 | 1-1/2 |
| | CIRCLING OR MISSED APPROACH | | NOT AUTHORIZED | 2 |

* DIVERGING COURSES ONLY

IFR Arrivals

Sequential Approaches on Common Path to Airport. The integration of helicopter and fixed-wing arrivals in the same approach path presents problems because of the difference in the approach speeds of the two types of aircraft. This normally results in a very long gap in the approach sequence whenever a helicopter follows a fixed-wing aircraft down the final approach path. Although this gap can sometimes be used to advantage in clearing extra departures, it generally results in lost runway capacity, and delays to succeeding aircraft.

The gap can be shortened either by having the helicopter fly the final approach at a speed considerably higher than its normal approach speed, or by making a short turn-on to keep the common path as short as possible. A research program has been planned to determine the practical parameters for short helicopter approach paths, using various types of approach aids.

Sequential Approaches on Different Paths to Airport. When an airport has approved approach procedures from different directions, it sometimes is practical to use one approach for fixed-wing aircraft and another for helicopters, as shown in Figure 4-1. Normally the convergence angle between the two approach courses should not exceed 90°. In this case a close-in holding fix is established for helicopters, which are cleared off this fix on short notice, to use time-slots between fixed-wing arrivals on the other approach path.

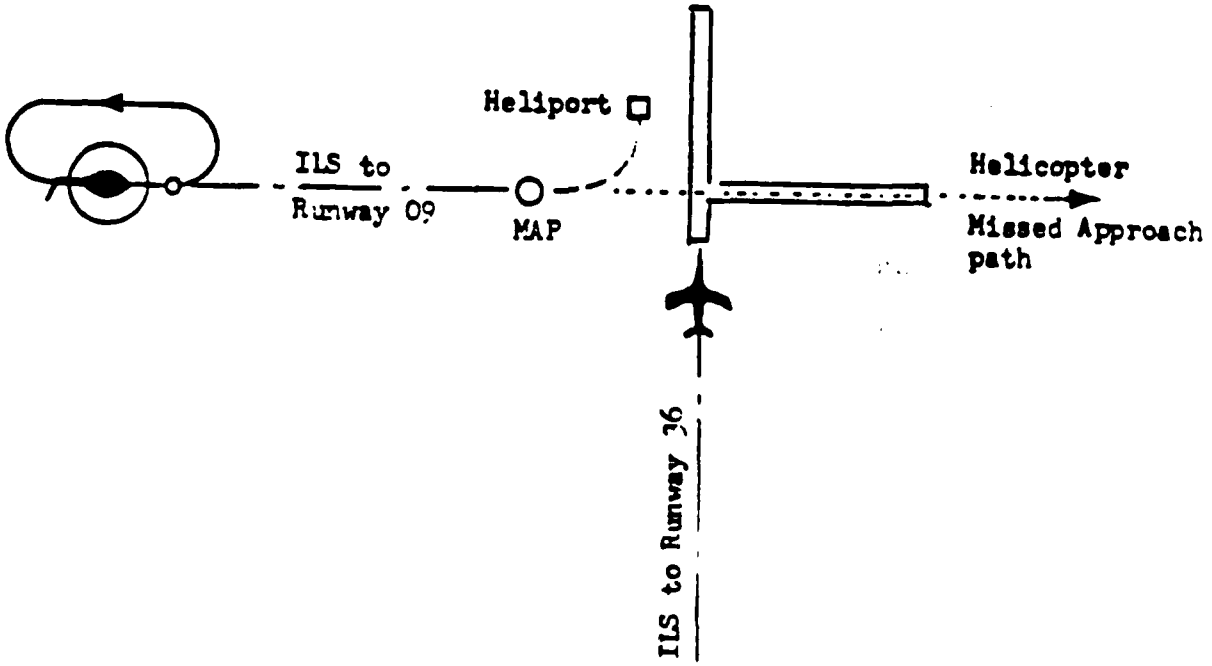


FIGURE 4-1. SEQUENTIAL APPROACHES ON DIFFERENT PATHS TO AIRPORT

Simultaneous Approaches on Different Paths to Airport. If it is possible to lay out the helicopter approach and missed approach areas so that they are completely clear of fixed-wing approach and missed approach areas, it should be possible to run simultaneous helicopter and fixed-wing approaches. Ideally, as shown in Figure 4-2, the convergence angle between the approach courses should not exceed 45°. This will enable the helicopter to make a 90° turn and diverge immediately from the fixed-wing traffic, if a missed approach becomes necessary. The MAP (missed approach point) is placed far enough back from the airport that the helicopter will always be able to complete this maneuver without encroaching on the fixed-wing airspace.

Approaches to Heliport. Normally, helicopter operators would prefer to stay out of congested airports and use separate heliport facilities. With the exception that helicopter approaches probably could be shorter and steeper than those presently required for fixed-wing aircraft, with shorter-radius turns and greater allowance for wind drift, there need be little difference from present procedures, in the way IFR helicopter arrivals will be vectored and sequenced into an IFR heliport.

Missed Approaches. A number of existing helicopter approach procedures have missed approach paths which simply make a 180° climbing turn and return to the initial holding fix. This is adequate if there is very little helicopter IFR traffic, but would tend to reduce capacity and increase delays in busy periods,as each aircraft blocks the entire approach path and the lowest useable altitude at the holding fix, until the aircraft reaches a point where it is assured of landing, or the pilot can cancel his IFR clearance.

Nearly all IFR helicopters are equipped with some form of area navigation (RNAV). There is a need to change the TERPS criteria, to give credit for the added flexibility and accuracy of RNAV equipment. Such credit is particularly needed in reducing the length and width of the missed approach area. With RNAV the pilot knows his position continuously, and can anticipate the exact time when he will be over the MAP. Therefore he can start his missed approach procedure the moment he reaches this point.

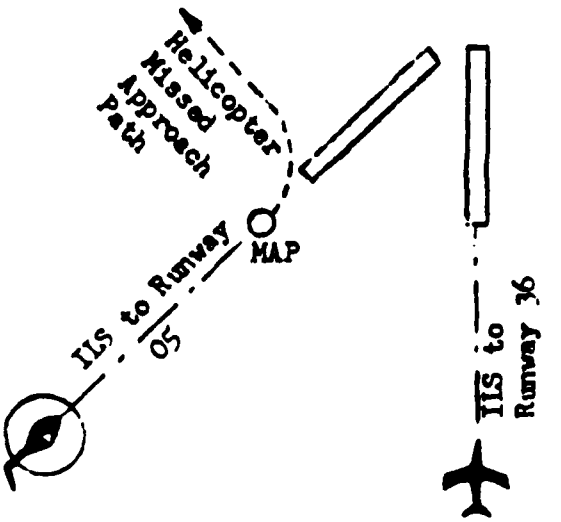


FIGURE 4-2 SIMULTANEOUS APPROACHES

The pilot has three other advantages by being in a helicopter instead of a fixed-wing aircraft: (1) he can arrest his descent without height loss, instantly at decision height; (2) he can start his missed approach climbout without changing the aircraft configuration and without needing to wait for engine spoolup; (3) he can start a turn immediately. All these points should be given consideration in changing TERPS criteria for the length of the missed approach path for an RNAV-equipped helicopter.

In addition, criteria regarding the width of the missed approach area for such aircraft should be reconsidered in light of the fact that with RNAV, there is no reason why navigational guidance along the missed approach path should be any less accurate than guidance down the final approach path.

Until the TERPS criteria are changed, however, the missed approach area will remain excessively large for this type of aircraft.

IFR Departures

The layout of standard IFR helicopter departure routes usually involves a compromise between a number of requirements, some of which may be mutually conflicting. The following discussion is intended as a kind of checklist for ATC planners, to ensure that all important factors are given due consideration in arriving at an optimum configuration.

Few helicopters need to start their takeoff from a runway. If the wind velocity is over 5 knots, the liftoff and initial climbout are made into the wind. However the helicopter can turn in any direction as soon as it has reached an airspeed of about 40 knots.

From the standpoint of fuel economy the ideal departure procedure for any flight would be straight out on course. However, from the standpoint of air traffic control it would be advantageous to keep the helicopter departure path as clear of fixed-wing paths as possible. Where this is impractical, any possible points of interference should be within ATC visual or radar surveillance coverage.

Environmental considerations may make it desirable to keep the departure path away from noise-sensitive areas, particularly when alternate routes are available. From the safety standpoint, flight paths obviously must have adequate clearance from obstructions.

Departure routes should be navigable by the pilot. With RNAV, a high degree of flexibility is available, so departure routes need not be confined to ILS localizer courses and VOR radials, provided that the aircraft will always be within VOR/DME coverage.

Because departures must be separated from arrivals, it may be possible for helicopter departure routes to coincide with helicopter missed approach paths, in order to conserve airspace in highly congested terminal areas.

Enroute Control

Over the years, the ATC system has developed into an exclusively ground-based system, with all control decisions being made by controllers in terminal or enroute ATC facilities. The provision of separation between fixed-wing aircraft operating under IFR has been designed and built around the use of surveillance radars. Navigation and approach aids, as well as the air/ground communication system, are based on the use of the VHF and UHF bands, which have the advantage of being relatively free of atmospheric noise, but which are subject to line-of-sight cut-off characteristics.

The helicopter is a relatively low-altitude vehicle. Its specialized uses will take it below and beyond radar and communications coverage, not only in offshore airspace but in domestic airspace as well. For this reason the use of procedural control will need to be applied, in geographical areas that have long been subject only to the use of radar control procedures; local training programs should re-emphasize familiarity with the use of time separation.

The characteristically slow speed of helicopters increases the relative effect of the wind on ground speed and wind drift, as any given wind velocity represents a greater percentage of the airspeed of a helicopter, than the airspeed of a jet transport.

The short range and the high flexibility in the choice of landing sites has increased the need for helicopters to be able to fly direct routes between selected random waypoints, in order to operate efficiently. A significant percentage of these routes would be off the established airways.

Today's ATC system is not well adapted for handling random route traffic between off-airway waypoints. One problem has been the difficulty for controllers to visualize where some of these points are if they are not shown on the video map. However, it would not be desirable to show all of these points on the video map, as this would generate a very confusing problem on the radar scope. What is needed is a method of calling up certain random waypoints for display on the PVD and ARTS displays, on an as-needed basis. The LOFF display described in Section 3 will have this capability.

These routes could be called up either automatically by flight-plan input, or manually by reference to lat-long or VOR/DME coordinates. Implementation of this capability would enhance the capability of the ATC system to control off-airway traffic; and in doing so would enhance significantly the use of area navigation systems.

The capability to control random-route traffic on a routine basis will determine whether the full potential of IFR helicopter operations can ever be realized. This capability is also applicable to normal domestic IFR aircraft in all categories. The more specific limitation is the human factor limit to control only a small number of aircraft on conflicting courses at a given time.

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November 25, 1980

Memorandum No. 5

TO: HAA HELICOPTER ATC STUDY WORKING GROUP

FROM: Glen A. Gilbert
HAA Program Manager

1. Enclosed is a copy of some notes on 7110.65B prepared by ATC Study Working Group member Tirey Vickers.

2. These notes supplement the material on HSVFR (ref. para. 1140) sent with my Memorandum No. 4.

3. This material should be useful to pilot members in conducting their first cut review of 7110.65B due December 15.

GAG:md
Encl.

NOTES ON FAA MANUAL 7110.65B TKV--11-25-80

Page 11, Para. 42: Where an icing level exists below 10,000, changes in its height or intensity could be most useful to helicopter pilots if included in hourly reports, when available.(not just sigmets).

Page 12-4, Para. 55: Drawing is ambiguous. Shouldn't altitudes in table 55 be in height above antenna?

Page 13, Para. 59 b (3): It is hoped that someday we can prove that holding airspace templates for helicopters can be smaller.

Page 19, Para 87 b: This appears to apply only to military; it is suggested that inclusion of the word COPTER in civil helicopter ident would be useful to controllers and to pilots of other aircraft, in knowing what to look for, in mixed traffic.

Page 21, Para 88: Ditto

Page 42, Para 237: In offshore helicopter route structure using area navigation with laterally offset parallel routes, it may be advantageous to put opposite-direction routes at same altitude, and opposite-direction crossing routes at next level.

In offshore airspace, suggest using 500-foot vertical separation between helicopter altitude levels, with all helicopters using radio altimeter.

Page 48, Para. 273: Use of fixed distance separation between all aircraft produces excessive time interval and very low route capacity with low-speed helicopters. 10 N.M. D.E separation appears generous under such conditions.

Page 53, Para. 294: Book needs to address appropriate separation for aircraft using Loran C (and someday other forms of) navigation.

Page 81, Para. 476: Most helicopters do not need a runway for takeoff and should not be forced to line up with fixed-wing aircraft on taxiway to wait for turn on runway. Where possible, helicopters should be expedited by departing on a heading which diverges from the stream of fixed-wing traffic.

Page 113, Para. 791: Maximum final approach interception angles don't appear applicable to slow-speed helicopters if approach speeds are in the 60-80 KT range.

Page 125, Para 922: "Rock your wings" doesn't seem appropriate to aircraft without wings. "Rock your rotor" might be better. "Show a landing light" might be better yet if helicopter is not headed in direction away from control tower.

Page 128, Para. 962: If airport has no helipad, but STOL runway is available, helicopters should be allowed to use STCL runway without letter of agreement as chance of over-shooting is zero. In any event there is no reason to keep helicopters in same traffic stream with large aircraft using the main runway.

Page 151, Para. 1140: Entire HSVFR section is mixed up and difficult to read. I have already expressed my thoughts on this subject, in Report FAA RD 80-88 (copy sent to HAA ATC Study Working Group).

Page 213, Para 1710 a: Same comment as Page 48, Para. 273.

HELICOPTER ASSOCIATION of America

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November 26, 1980

Memorandum No. 6

TO: HAA HELICOPTER ATC STUDY WORKING GROUP

FROM: Glen A. Gilbert
HAA Program Manager

1. Enclosed are:
   a) Notes of ATPAC VFR Operations Subcommittee (December 3 - 7, 1979).
   b) Comments by AOPA (March 19, 1980) subject: "The TRSA/Stage III Mess".

2. Also enclosed is a letter dated November 11, 1980, from ATCA re a seminar they are holding on December 9 and 10, dealing primarily with TCA's, TRSA's and Stage II service.

3. If any members of the ATC Study Working Group can make this seminar, please send in the registration form directly to ATCA. At this time, I expect to be out of Washington on those dates.

4. In any event, I have advised both Gabe Hartl (ATCA Executive Director) and seminar coordinator Don Francke of our program, and plan to get together with them at an early date after the seminar to coordinate our respective efforts.

GAG:md
Encl.

Notes of ATPAC VFR Operations Subcommittee

December 3 through 7, 1979

The ATPAC VFR Operations Subcommittee met in Washington at FAA headquarters December 3 through December 7. As assigned by the ATPAC Chairman, this subcommittee was chaired by Bob Warner of AOPA. An attendance list for the meeting is attached to these minutes. After introductory comments, the subcommittee discussed the purpose and scope of the meeting. It was decided that all individuals present, whether ATPAC members or not, would be permitted to provide input. It was hoped that this dialogue (to include the FAA) would facilitate the accomplishment of the subcommittee's goals.

FAA Administrator Bond, at the last ATPAC meeting "tossed the ball back into the ATPAC court" to come up with suggestions on how a VFR pilot can get from point A to point B more expeditiously, and in a safe manner. A number of members concurred, however, that the scope of the VFR subcommittee is a little larger than that task alone. The subcommittee will look into other problems which exist in confusion between pilots and controllers and confusion in the minds of either of these groups concerning VFR operations and IFR operations, when in VMC.

After general discussions on the organization of this meeting, it was decided to proceed first with discussions of airspace problems. An area of unnecessary procedural redundancy surfaced at the last ATPAC meeting concerning airport traffic areas and

discontinued distribution of the "Green Demon" chart to all airports last summer in anticipation of the FAA distributing their Wall Planning Chart, (2) FAA made a onetime distribution of the VFR and IFR Wall Planning Charts with a suggestion to airport operators to subscribe on an annual basis, and (3) the onetime distribution was based on the fact that all VR routes above 1500 feet AGL and all IR routes are currently published on the low altitude enroute charts. Current plans call for all VR and IR routes to be published on sectional charts beginning in the spring. It was suggested that GADO and FSDO evaluation people should check on the presence of military training route charts at both FSSs and FBOs.

The discussion turned to special VFR procedures. Airline pilot representatives indicated concern that as IFR aircraft, they are being separated from Special VFR aircraft piloted by pilots who do not understand the procedure. The problems as related by controller representatives included (1) a concern for how safe flight is beyond 5 miles away from the airport, and (2) that oftentimes VFR pilots cannot be relied upon to follow a specific route and/or altitude. This necessitates closing the entire control zone to IFRs while the Special VFR is arriving or departing.

General aviation pilot representatives pointed out the importance of this procedure, particularly in the case where the control zone is legally below VFR minimums due to a localized fog bank or ceiling condition that necessitates Special VFR use. It was the committee's impression that oftentimes local procedures for holding

advisory service to VFR aircraft. Since a recent change to the 9020 computer program, Center computers will process abbreviated VFR flight plans, automatically producing flight progress strips at appropriate sectors and adjacent Centers. Input of VFR flight plans are made at the Center controller's option. If a VFR flight plan has been entered properly, the flight progress strips can be transmitted to automated terminal facilities (ARTS III and II) similar to IFR flights. Terminal facilities with FDEP can also initiate this strip printing function. All automated terminal facilities have FDEP as do some nonautomated facilities. There are individual problem areas with the printout of flight progress strips. These usually occur between Centers and terminal facilities and, of course, nonautomated terminal facilities would not be provided with the flight progress strips in any event. This is significant since many VFR aircraft desiring these services would be flying at lower altitudes and, therefore, transiting terminal facility airspace.

The question was aksed as to whether it would be advantageous to both the pilot and the controller to have these strips printed. Some members of the subcommittee thought yes, from an administrative standpoint. Other members thought no, that it would actually cause a computer overload, slowing the computer processing and necessitating the computer to drop lower priority functions. It was the subcommittee's impression that the system could not handle the mandatory provision of VFR enroute advisories. However, it was believed that the system (controllers) could handle the tagging and tracking of VFR enroute aircraft if work load permitted them to provide the advisories. The advantages of having strips provided for VFR aircraft include having it assigned an IFR code from the National

Beacon Code Allocation Program and, therefore, minimizing the need to change these codes as it proceeds enroute and through terminal facilities and automatic interface of the data between Centers and automated terminal facilities. Disadvantages of this procedure are that the planes will be going through nonautomated terminal airspace or in and out of radar coverage, and the continuation of automatic VFR flight plan processing after radar service has been terminated. Some controller representatives felt that flexibility may actually be decreased for controllers if strips had to be provided.

The question of conflict alert (CA) and minimum safe altitude warning (MSAW) services to VFR aircraft was discussed. At enroute facilities, conflict alert is provided at half of the standard vertical criteria to VFR aircraft that are Mode C equipped and being tracked. Enroute minimum safe altitude warning systems (not yet implemented) will automatically inhibit VFR aircraft being worked. This service will not be automatically provided since many VFR aircraft will be flying below the computer's stored minimum safe altitudes. However, controllers will have the capability to activate EMSAW for VFR aircraft by entering a separate message to the computer. At terminal facilities, MSAW is provided to VFR aircraft that are Mode C equipped, only upon request. Conflict alert service in both the terminal and enroute facilities is provided between IFR- and VFR-tracked aircraft. This service is not provided to any VFR untracked aircraft. Again, Mode C transponder is required for this service.

The question was asked as to whether controllers put altitude information from VFR aircraft as reported by the pilot into the radar data tag. After some discussion, it was determined that some local terminal facilities actually direct the controller to use this information in the "scratch pad area," while other local directives prohibit its use. Normally, Center controllers enter "VFR" and rely on the Mode C readout for altitude.

recommendations to forward to ATPAC concerning VFR operations, there were signifcant efforts to define some of the VFR and VMC problem areas within the system. Also accomplished was an increased consciousness by ATPAC members of the problems of VFR operators. Hopefully, subcommittee members will work towards a better understanding of pilot perceptions when operating in VMC with an eye towards bringing these perceptions in line with reality of what the system actually is providing.

The chairman will distribute to all subcommittee members: (1) minutes of the December 3 - 7 meeting, (2) copies of the TCA/TRSA report from the NASA ASRS fourth quarterly report, (3) copies of the Near-Midair Collision report of the ASRS tenth quarterly report, (4) attendance list from the December meeting, (5) an address list of the subcommittee members, (6) a draft of the pilot survey discussed at the meeting, and (7) a draft memo to ATPAC with subcommittee recommendations.

Robert T. Warner

Chairman, ATPAC VFR Operations Subcommittee

AOPA AIRCRAFT OWNERS AND PILOTS ASSOCIATION

March 19, 1980

Memo to: ATPAC Members

From : Robert T. Warner

Subject: The TRSA/Stage III Mess

References:

AIM (various paragraphs)
Handbook 7110.65B (various paragraphs)
Minutes of ATPAC VFR Operations Subcommittee (December 1979)
Minutes of ATPAC 19 (Los Angeles)
Minutes of ATPAC 14 (R-14-8)
NASA ASRS Fourth Quarterly Report
Report of FAA/DoD Task Group on Terminal Radar Programs (1978-9)
Report of FAA ATS Task Group on Stage III Service (Jan-Feb 1980) (not yet available)
NASA ARS Draft Report on Near Midair Collisions (mid-1979)

The plot is thickening. We (all of us) have a problem with TRSAs and Stage III. This transgresses any institutional "party lines."

I'll precede the background with a simple statement of the problem and a possible solution. No one--FAA, pilots or controllers--knows what is going on in TRSAs. Therefore, we should not be implementing them until we figure it out. (If the metal comes together in one of the existing TRSAs, we will be discussing this in an NTSB hearing. No ATPAC member wants to be a party to that.)

Background

This discussion cranked up after San Diego, when we discovered the accident environment could have been a TRSA or TCA. Lin Odems gave us glimpses of what was discovered by the FAA/DoD Task Group.

As a result of the FAA Notice 78-19 and the "Enhancement" program of more TCAs and TRSAs, NASA's ASRS data was tapped to see whether more control is more safety. A NASA Draft Report said "No," in fact, just the opposite if you are talking terminal radar control/service.

At ATPAC 14, the Committee told FAA this whole thing is confusing and recommended the number of stages of service be reduced to less than 3.

At ATPAC 19, FAA reported this ATPAC recommendation has been made a part of "an FAA review of the national terminal radar program - pending." Anyway, FAA had established a task group to investigate Stage III service, and specifically whether it was supposed to be provided in the traffic pattern at the primary airport.

Meanwhile, the ATPAC VFR Ops Subcommittee had discussed this subject for days. A subgroup of this subgroup was briefed by the FAA task group in late February 1980. We were amazed and astounded.

My opinion of the Task Group's work is that the FAA went out and talked to themselves about how to improve Stage III service. The solution is a Band Aid fix of the symptom. The FAA never dug deep enough to find the cause of the problem. They never asked the basic questions: what is Stage III; what are they really providing; what do pilots think they are getting; what do they want; and what is needed?

Terminal radar programs, when you include visual separation, is the biggest problem in the system today. Future TRSAs should not be implemented until Stage III service is sorted out.

Recommendation: ATPAC recommends to the Administrator that all new TRSA implementation be halted until the questions raised by ATPAC concerning services provided and pilot understanding are answered.

Bob

Robert T. Warner

Air Traffic Control Association, Inc.

Suite 410
2020 North 14th Street
Arlington, Virginia 22201

Area Code (703) 522-5717

November 11, 1980

Mr. Glen A. Gilbert
2500 Virginia Avenue, N.W.
Washington, D.C. 20037

Dear Glen:

A two-day Seminar on *Air Traffic Control In Terminal Area Operations* will be held at the Sheraton National Motor Hotel, Columbia Pike and Washington Boulevard, Arlington, Virginia, on December 9 and 10, 1980. (See accompanying schedule.) This Seminar will be conducted by the Air Traffic Control Association, Inc. (ATCA) in response to a contract from the Federal Aviation Administration, and is open to the public. There will be no admission charge or fees charged to attend.

The Seminar objective is to fully consider and analyze the following ATC topics and problem areas:

- Use of Terminal Control Areas (TCAs)
- Stage III services within Terminal Radar Service Areas (TRSAs)
- Stage II services in air traffic control

The first day of the Seminar will consist of presentations by an ATCA panel from the various aviation disciplines. The second day of the Seminar will consist of a question and answer session and statements by the public. Public participation is invited and encouraged. Individuals desiring to make a prepared statement are asked to forward the text of their statement no later than November 28, 1980, to facilitate scheduling on the second day of the Seminar. Forward your statement to:

Air Traffic Control Association, Inc.
2020 North 14th Street, Suite 410
Arlington, Virginia 22201

If you are unable to provide a text of your statement prior to the meeting, please advise ATCA if you intend to make a statement. In view of the anticipated public response, the Seminar Chairman may have to limit public statements to a maximum time of 15 minutes each. Because of this limitation it is especially important that written statements be provided to be included into the record.

IT SHOULD BE NOTED THAT ALL PRESENTATIONS AND STATEMENTS MADE AT THE SEMINAR WILL BE RECORDED VERBATIM AND BECOME PART OF ATCA'S FINAL REPORT TO THE FEDERAL AVIATION ADMINISTRATION.

REGISTRATION. Registration for the conference will begin at 8:00 a.m. on December 9, 1980, in the lobby of the Sheraton National Motor Hotel and continue through that day until 5:30 p.m. Advance registration for the Seminar should be accomplished by using the registration card attached to this notice and returning it to the Air Traffic Control Association as soon as possible.

HOTEL RESERVATIONS. In view of the short notice, reservations for hotel rooms should be made directly with the Sheraton National Motor Hotel as soon as possible by telephone. Telephone: (703) 521–1900. IDENTIFY YOURSELF AS ATTENDING THE ATCA SEMINAR WHEN MAKING HOTEL RESERVATIONS so that you will receive the special rates offered for the Seminar:

| | | |
|---|---|---|
| Single Room | : | $50.00 per day |
| Double Room | : | $60.00 per day |

Please contact Don Francke, Air Traffic Control Association, Inc., at the above address (Telephone: (703) 522–5717) if you have any questions regarding the Seminar.

Sincerely,

Gabriel A. Hartl
Executive Director

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**REGISTRATION FORM**

**AIR TRAFFIC CONTROL IN TERMINAL AREA OPERATIONS**
**ATCA SEMINAR**
**December 9–10, 1980**

Name _____ Title/Rank _____

Company / Organization _____

Street Address _____

City _____ State _____ Zip _____

*(PLEASE PRINT INFORMATION)*

AD-A175 179 RECOMMENDED CHANGES TO ATC (AIR TRAFFIC CONTROL) 2/2
PROCEDURES FOR HELICOPTERS(U) HELICOPTER ASSOCIATION
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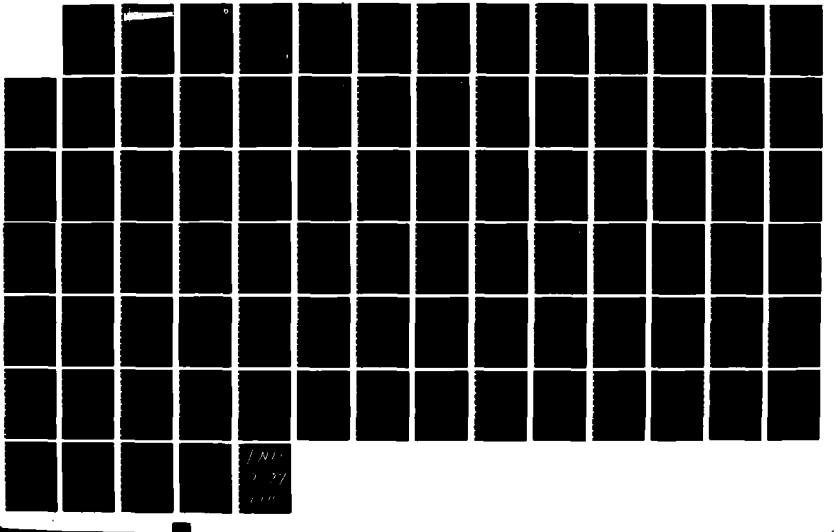
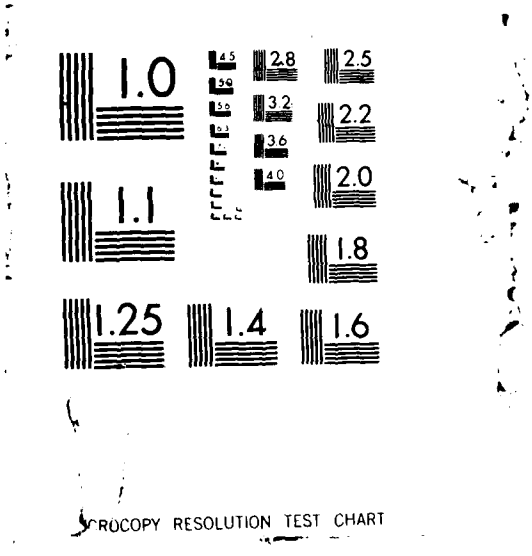




# Air Traffic Control Association

**ATC SEMINAR——OPEN TO THE PUBLIC**

## AIR TRAFFIC CONTROL IN TERMINAL AREA OPERATIONS

- Use of Terminal Control Areas (TCAs)
- Stage III Services within Terminal Radar Service Areas (TRSAs)
- Stage II Services in Air Traffic Control

Date : December 9—10, 1980
Place : Sheraton National Motor Hotel, Arlington, Virginia

### SCHEDULE OF EVENTS

**TUESDAY, December 9, 1980**

| | |
|---|---|
| 8:00 a.m. - 5:30 p.m. | Registration in hotel lobby |
| 9:30 a.m. - 10:00 a.m. | Introduction by Robert I. Gale, Chairman |
| 10:00 a.m. - 10:45 a.m. | William E. Broadwater, FAA Retired (Former FAA AAT—200 and AAT—400) |
| 10:45 a.m. - 11:00 a.m. | BREAK |
| 11:00 a.m. - 11:45 a.m. | Daniel E. Barrow, Asst. Chairman, Sperry UNIVAC |
| 11:45 a.m. - 1:00 p.m. | LUNCH |
| 1:00 p.m. - 1:45 p.m. | Robert L. McClure, Captain TWA |
| 1:45 p.m. - 2:30 p.m. | James R. Banks, Air Force Communications Command |
| 2:30 p.m. - 3:00 p.m. | BREAK |
| 3:00 p.m. - 3:45 p.m. | Richard L. Collins, Sr. Editor, FLYING Magazine |
| 3:45 p.m. - 4:30 p.m. | Jack J. Eggspuehler, President, Traveling Aviation Seminars; President, NAFI |
| 4:30 p.m. - 5:15 p.m. | Robert I. Gale, President, R. I. Gale & Associates |

**WEDNESDAY, December 10, 1980**

| | |
|---|---|
| 9:00 a.m. - 9:30 a.m. | Review/Summary, Robert I. Gale, Chairman |
| 9:30 a.m. - 11:30 a.m. | Questions & Answers/Public Statements |
| 11:30 a.m. - 1:00 p.m. | LUNCH |
| 1:00 p.m. - 5:00 p.m. | Questions & Answers/Public Statements |
| 5:00 p.m. | Close of the Seminar Open Sessions |

U.S. Department of Transportation

news:

Office of Public Affairs

Washington, D.C. 20590

FOR RELEASE THURSDAY
October 23, 1980

FAA 57-80
Contact: Gerald Lavey
Tel.: 202/426-8521

# FAA SEEKS EVALUATION OF AIRPORT SAFETY ZONES

Federal Aviation Administrator Langhorne Bond has announced that an independent organization has been hired to measure the benefits of airport safety zones established by FAA at busy terminals to provide better protection against midair collisions.

The assessment will be done by the Air Traffic Control Association of Arlington, Va., under a $94,634 contract.

Called terminal control areas (TCA) and terminal radar service areas (TRSA), the safety zones are essentially blocks of airspace surrounding major airports where strict operating and equipment requirements apply or where special air traffic services are available.

At the busiest terminal control area sites, such as New York and Chicago, for example, pilots must have at least a private pilot's license, must get an air traffic control clearance to enter the TCA airspace and follow air traffic control directions once inside. In addition, aircraft must have certain navigation and communications equipment, such as a two-way radio and carry an altitude-reporting transponder which provides controllers with direct radar readout of the identity and altitude of the aircraft under their control.

In the case of terminal radar service areas, pilots operating under visual flight rules (VFR) and maintaining separation from other aircraft on a "see and avoid" basis may get the same essential air traffic control services as instrument flight rules traffic once inside the terminal area. That is, air traffic control provides them radar separation from other participating aircraft to keep them apart. Although pilot participation is voluntary, more than 90 percent of VFR pilots make use of this service.

- more -

Currently, there are 22 TCAs and 135 TRSAs in the U.S., with another 31 locations being considered as candidate sites for TCAs and 28 for TRSAs.

Bond said the FAA is in the process of developing definitive guidelines for establishing TCAs and TRSAs and "an independent assessment from a professional society dedicated to the science of air traffic control will help us find out whether we're on the right track."

The contract with the Air Traffic Control Association calls for the review of the current FAA procedures for establishing and designing TCA and TRSA. The contractor also will analyze existing TCA and TRSA locations in terms of safety and their operational and economic effects on pilots and other users. In particular, FAA wants to know whether the need for a TCA or TRSA increases in direct proportion to the number of passengers using a particular airport.

As part of its evaluation, the Air Traffic Control Association will hold a five-day seminar later this fall. Part of the proceedings will be open to the public. A report on the group's findings will be delivered to FAA within four months.

# # #

Distr: A-WXYZE-2, A-FAT-7, A-FIA-0 (Limited), ZMS-403

HELICOPTER ASSOCIATION of America

1156 15th St., N.W., Suite 610, Washington, D. C. 20005 (202) 466-2420 Telex 89615

November 26, 1980

Memorandum No. 7

TO: HAA HELICOPTER ATC STUDY WORKING GROUP

FROM: Glen A. Gilbert
HAA Program Manager

1. Enclosed are copies of FAA proposed changes to FAAH 7110.65B, para. 796 and 1121b. (Any specific comments should be sent to me by December 15).

2. These portions of 7110.65B illustrate a general problem with 7110.65B insofar as helicopters are concerned, and that is that the term "aircraft" is used when really the application is to fixed wing CTOL's, or in other words "airplanes".

3. I believe that our ATC 7110.65B study project must give very serious consideration to this question. Once such a differentiation is made, however, this begs the question of what should be said about helicopters in a given context.

4. Please include this perspective in pilot members' initial cut inputs.

GAG:md
Encl.

SEP 30 1980

Subject: Handbook 7110.65B-1121.b.

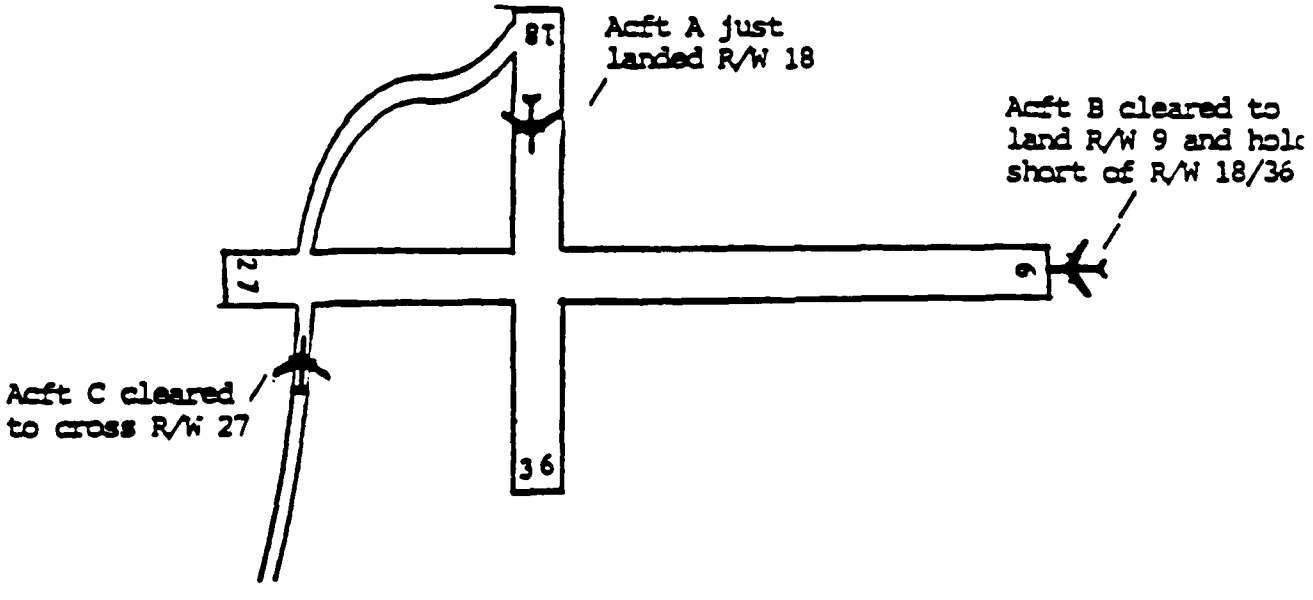
I. BACKGROUND:

The procedures in Handbook 7110.65B-1121.b., require one of the landing aircraft to be restricted from entering the intersection of an intersecting runway upon which another aircraft is landing. Controllers Operations and Procedures Committee (COPCOM) has suggested that the remaining portion of that runway for which the restriction is applied could be used to expedite traffic by crossing the restricted portion while the landing aircraft is approaching, or even on, the other unrestricted portion of the same runway.

II. PROPOSAL:

Allow aircraft to cross that portion of a runway, restricted from use by the landing aircraft, when applying the procedures contained in Handbook 7110.65B-1121.b. or Order 7110.75A.

In the case illustrated below aircraft "c" could be cleared to cross the approach end of Runway 27 because the arriving aircraft "B" landing on Runway 9 is restricted from entering the intersection of Runways 18/36 and 9/27 and, therefore, restricted from proceeding beyond and onto that portion of the runway taxiing aircraft "C" will cross.



SUBJECT: Visual Approaches; Proposed Change to FAAH 7110.65B-796

I. BACKGROUND:

The advent of charted visual approaches, which are designed primarily to minimize community noise burdens, take advantage of the pilot's ability to provide his/her own course guidance to the runway through the use of visual cues. The handbook, as currently written, states that an aircraft not following another aircraft must have the airport in sight before a visual approach clearance can be issued.

While the successful execution of most of today's charted visual approaches clearly require the airport to be in sight due to a lack of prominent geographical features, there are some instances where prominent geographical features are available and, in fact, can provide the primary navigational guidance to the runway. Where those features (e.g., a river) are available, significant noise reduction benefits may be realized since the use of those prominent geographical references would allow an aircraft to avoid noise sensitive areas a significant distance from the airport. Occasionally, however, the point from which the visual approach could begin under the proposed concept would be beyond the distance which would allow a pilot to positively report the airport in sight. Therefore, the available options are (1) preclude this use of charted visual approaches when the airport cannot be positively reported as being in sight, thereby sacrificing the noise reduction benefits, or (2) permit them, provided the prominent geographical reference providing visual navigational guidance to the runway has been reported as being in sight.

It would seem logical and likely that if the pilot can sight and positively identify the prominent geographical reference associated with the charted visual approach at an early stage of the approach, the flight conditions are such that the airport will also be sighted and identified at a later stage (and lower altitude) in ample time to execute a successful landing. However, if that assumption is judged to be inadequately positive, additional phraseology can be introduced which would instruct the pilot to report the airport in sight to the tower.

Because the issue is strictly how an aircraft proceeds from a point along the visual approach path and does not alter the procedures for separating that aircraft from other aircraft, we are confident that there would be no compromise in aviation safety due to this proposal.

II. PROPOSAL:

| EXISTING | PROPOSED |
|---|---|
| 796. VISUAL APPROACHES | 796. VISUAL APPROACHES |
| * * * * * | * * * * * |
| c. Clearance for visual approach. | c. Clearance for visual approach. |
| A radar controlled aircraft may be cleared for a visual approach provided: traffic conflicts with other aircraft have been resolved; the aircraft is and can remain in VFR conditions; and at a controlled airport, the tower is informed of the aircraft's position prior to communications transfer, and | (No change.) |

| EXISTING | PROPOSED |
| --- | --- |
| 7110.65 Note 1.—If an aircraft is being vectored for an instrument approach and subsequently reports the airport in sight, controllers may initiate a visual approach or pilots may request a visual approach provided the conditions of a are met. Under these conditions, the provisions of 7110.65 (1) are not applicable, and a controller's only obligation as it relates to weather is to ensure compliance with 7110.65 and to only authorize such operations when weather conditions are clearly not a prohibiting factor. | (No change.) |
| 7110.65 Note 2.—ARTS functions may be used to inform the tower if a Facility Directive or Letter of Agreement specifies control and communications transfer points. | (No change.) |
| 7110.65 References.—Airport traffic areas, 32; Arrival Information by Approach Control Facilities, 392. | (No change.) |
| (1) An aircraft, not following another aircraft on approach, reports sighting the airport, or | (No change.) |
| (N/A) | (2) An aircraft being positioned for a charted visual approach, not following another aircraft, reports sighting the prominent geographical feature(s) which provides the visual navigational guidance required for the approach., or |
| (2) An aircraft reports sighting a preceding aircraft landing on the same runway, and has been instructed to follow it, or | (No change.) (Renumbered to (3).) |
| 7110.65 (2) Example.—"Cessna Five Six November, follow the heavy American DC ten. Cleared for a Visual Approach to Runway One. Caution, wake turbulence." | |
| (3) An aircraft reports sighting a preceding aircraft making an approach to a parallel runway separated by less than 2,500 feet and all aircraft involved are informed that approaches are being conducted to the parallel runway (DO NOT PERMIT A HEAVY AIRCRAFT TO OVERTAKE ANOTHER AIRCRAFT), or | (No change.) (Renumber to (4).) |

| OLD | NEW |
| --- | --- |
| (4) An aircraft reports the airport but not the preceding aircraft in sight, provided radar separation is maintained or both aircraft are sighted by the local controller and visual separation is provided. In either case, wake turbulence separation must be applied as appropriate, or | (5) An aircraft reports the airport or the prominent geographical feature(s) required for a charted visual approach but not the preceding aircraft in sight, provided radar separation is maintained or both aircraft are sighted by the local controller and visual separation is provided. In either case, wake turbulence separation must be applied as appropriate, or |
| 7-8-2(4) Reference—Wake Turbulence, Chapter 6. | |
| (5) When using converging runways or parallel runways separated by 2,500 feet or more, one of the conditions in paragraph 7-8-2c(1), (2), or (4) must be present and all aircraft involved are informed that other arriving aircraft are using the other runway, and | (No change.) (Renumbered to (6).) |
| 7-8-2(3) and (5) Note.—While conducting simultaneous visual approaches to parallel or converging runways, or visual approaches to one runway and instrument approaches to the other, separation must be maintained until the aircraft conducting the visual approach has received and acknowledged for a visual approach clearance. | (No change.) |
| (6) *USAF/USN NOT APPLICABLE.* When a charted visual approach procedure is used, specify the published name of the procedure and the landing runway in the clearance. | (No change.) (Renumbered to (7).) |
| * * * * * * | * * * * * |

4. ADMINISTRATIVE INFORMATION:

We would appreciated your consideration and candid comments on this proposal and the arguement and options discussed in the BACKGROUND. If you have any questions or wish to discuss this topic, please contact Stephen M. Alvania, AAT-320.2, (202) 426-8532.

Paul H. Strybing

PAUL H. STRYBING
Acting Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

HELICOPTER ASSOCIATION of America

1156 15th St., N.W., Suite 610, Washington, D. C. 20005 (202) 466-2420 Telex 89615

MEMORANDUM NO. 8

December 29, 1980

TO: HAA HELICOPTER ATC STUDY WORKING GROUP

FROM: Glen A. Gilbert
HAA Program Manager

1. Enclosed for your information is a summary report prepared by Tirey Vickers on the TCA/TRSA seminar held on December 9 and 10, 1980

2. Please note especially the comments re ATC Handbook 7110.65B on page 7. Your comments or recommendations are invited.

TKV--12-15-80

# THE TCA/TRSA SEMINAR

## Background

Beginning in 1970, the FAA established 21 Terminal Control Areas (TCA's) to place certain constraints on VFR operations in the vicinity of the busiest air carrier airports. These TCA's covered all airports which enplaned 2.5% or more of the nation's airline passengers. In 1978 the FAA lowered the figure in the TCA establishment criteria to 0.5% of the nation's enplaned passengers. This covered 44 additional terminal areas. When the proposal to establish these 44 TCA's was published as part of Notice of Proposed Rule Making (NPRM) 78-19, it stirred up a hornet's nest of protest, mostly from general aviation users. This resulted in 43,000 written comments, 1600 Congressional letters to be answered, and from 20 to 50 phone calls a day to FAA Headquarters, over a 3-month period.

The FAA reconsidered the matter and withdrew 16 of the proposed TCA's from further consideration. They also asked ATCA (The Air Traffic Control Association) as an independent organization, to determine the effectiveness of TCA's and Terminal Radar Service Areas (TRSA's), to evaluate their current establishment criteria, and to recommend changes where appropriate. ATCA assembled a study group of knowledgeable experts, under the direction of Don Francke as Project Manager. Each member was asked to do his own research and prepare a paper on his own views of the subject, without reference to the other members of the group. These papers were presented at a seminar "Air Traffic Control in Terminal Area Operations" which was held at the Sheraton/National Hotel in Arlington, VA, on December 9 and 10, 1980. About 80 persons, including 4 from Canada, attended this meeting.

## Panel Sessions

Chairman of the Seminar Robert I. Gale, President of Robert I. Gale and Associates, introduced the other members of the study group:

William E. Broadwater, Former AAT-200 and AAT-400

Daniel E. Barrow, Sperry Univac

Capt. Robert L. McClure, TWA

James R. Banks, Air Force Communications Command

Richard L. Collins, Editor, FLYING MAGAZINE

Jack J. Eggerpuehler, President, NAFI

All the panel members were pilots; those who had been controllers had a grand total of 150 years of ATC experience.

Mr. Broadwater discussed the history of regulatory airspace actions and the rationale behind the establishment criteria for TCA's.

Four of the speakers concurred in the idea that the concept of basing the TCA criteria on the number of enplaned passengers was meaningless; ATC separates aircraft, not passengers. Mr. Gale suggested that the criteria be based on traffic density and complexity. The density index would incorporate total operations, instrument operations, and traffic mix (the ratio of high performance to low performance aircraft); complexity would involve the proximity of other airports, terrain, obstructions and other factors which would tend to constrain the free flow of traffic. This would require the study of candidate locations on a site-by-site basis before any decision was made that a TCA was warranted.

The need to get user groups into the planning operation early was recommended by several panel members; a large percentage of the 43,000 written comments complained that the FAA had presented the plans for proposed TCA's, without prior coordination with user groups or adequate consideration of general aviation needs. Some of the other written comments complained that the FAA personnel who attended the public hearings had no decision-making authority.

Several panel members urged the simplification of the rules and procedures. With 3 sets of requirements for flight in TCA's, and 3 stages of radar service available in TCA's and TRSA's, many controllers as well as pilots are confused; and such confusion can increase the hazard of terminal area operations. One speaker reported that there is one near miss for every 56,000 operations, in the existing TCA's.

The vast majority of near misses and actual mid-air collisions in TCA's occur when one of the aircraft is not communicating with, or is not seen by, ATC. Part of the problem may be due to ignorance of the details, which are published in the AIM. Many pilots do not get the opportunity to read the AIM. Although there are over 800,000 pilots in the USA, only 23,000 copies of AIM are printed and a large number of these go to government agencies.

Another part of the problem is due to the very arbitrary and complex shape of the TCA's. Some, like the one at St. Louis, are based on radii from the radar station. In this case, a pilot who wanted to circumnavigate the TCA could have a difficult time in determining whether he was inside or outside the TCA and could intrude on it inadvertently. Several speakers recommended that TCA's be centered on a VOR/DME facility so that pilots with VOR/DME equipment could quickly determine their position in relation to the TCA boundaries.

Another problem is that instructors teach toward the FAA Pilot Examination Requirements, which include very little material on ATC, or TCA or TRSA services. Several speakers recommended that pilot examinations be changed to require more knowledge on coping with TCA's, and that the flight and ground school instructors need to be upgraded with the proper knowledge.

There was considerable discussion as to the best way to make sure that presently certificated pilots got the word about TCA's and TRSA's. It was noted that Jeppesen furnishes a service which carries changes in the AIM. Two panel members thought it would be a good idea for the FAA to furnish an AIM subscription to each pilot, either free or by covering the cost in a fee for the pilot's license. Others expressed doubt that some pilots would get around to reading AIM even if they got it, or would remember it when they needed the information. The biennial flight check was recommended as a good opportunity to see that certificated pilots eventually received the appropriate information. Mr. Collins said the best place to put the necessary data would be to print it right on the chart itself. This would put it at the pilot's fingertips at a time when he had a need to know.

Several panel members urged simplification of the various stages of radar service. ATC cannot guarantee separation from VFR traffic. One speaker recommended that the VFR separation responsibility remain with the VFR pilot and that the ATC separation responsibility, as described for Stage III, be deleted. Others thought that Stage II should also be dropped.

Another speaker characterized the 44-TCA program as "procedural overkill" and said that the FAA had not given military requirements enough consideration when setting up NPRM 78-19. He said that many VFR pilots are not equipped, or are intimidated by TCA's, and prefer to go around or

under them, rather than going through the hassle of trying to get a clearance through the TCA. As a result the presence of the TCA tends to increase the VFR traffic density around the outside of the TCA envelope. If there is a military field in this vicinity (such as Scott AFB, just outside the St. Louis TCA) a situation is created in which the VFR traffic gets into conflict with high-performance military aircraft. Other speakers agreed that the increased VFR traffic density just outside the TCA envelope, or through low-altitude access tunnels under the TCA, can create a very risky collision hazard, as attested to by numerous incident reports.

Most TCA's extend up to 7000 or 8000 feet; most departing jet transports pop out of the top of the TCA 18 to 20 miles from takeoff. Airline pilots and operators want to see the TCA's extended up to the floor of the positive controlled area (PCA). This would require a radius of 42 NM if the present wedding cake configuration was followed.

One speaker described the concept of upper corridors connecting the top of the TCA with the floor of the PCA. This would require less airspace than enlarging a circular TCA to a radius of 42 NM (84 miles across).

He also described a corridor concept in which that portion of the TCA below 5000 feet would be replaced by a PIADA (Protected Instrument Approach/Departure Area); this would include a descent corridor with a slope of 300 ft./NM, and a climb corridor with a slope of 800 ft./NM.

These corridors would be aligned with the extended centerlines of the arrival and departure runways in use. When the direction of arrivals and/or departures was changed the corridors would be changed accordingly. This concept would embody less cubic miles of airspace than the typical TCA, but would tend to limit the vectoring flexibility possible with jet traffic. If all arrival vectoring had to be accomplished before the aircraft left 5000 AGL (in order to keep the arrival within protected airspace) the final approach path would have to be at least 16 2/3 NM long. The longer the final approach, the more aircraft have to be on final approach simultaneously, in order to keep the approach path full. This tends to make the spacing less accurate, which in turn reduces the landing rate.

Another possible problem with the PIADA would be the complexity of charting it for each of the runways which would be used. However, it was suggested that the concept

be tested thoroughly in simulation, to see whether practical solutions could be found.

It was suggested that the FAA chart preferential VFR routes which would stay clear of TCA's where possible. This might require the addition or relocation of certain navaids, although aircraft using RNAV probably could negotiate most of these routes without changing any ground facilities.

One problem today is that many general aviation aircraft do not have Mode A transponders; only a small percentage have Mode C (altitude encoding). Several of the panel members pointed out that ATC surveillance of VFR traffic could be facilitated tremendously if the entire general aviation fleet had Mode A and C transponders. It was suggested that the economic resistance to this improvement could be eased if legislation were passed to allow an income tax credit to be claimed for the purchase of such equipment, in a manner similar to the tax credit presently granted for the purchase of home insulation.

The need for reliever airports was pointed out by several speakers, as a means of offloading some of the main terminal airports and TCA's. It was emphasized that the reliever ports must be instrumented with approach aids to handle IFR operations. The importance of adequate hangar facilities at reliever airports was stressed, as an incentive for general aviation owners to move away from the big terminal airports.

Audience Participation

The second day of the seminar was devoted to audience participation; this included a question and answer session plus an opportunity for members of the audience to make statements for the record.

One of the conference attendees advocated a keep 'em high program for jets and a keep 'em low program for piston-powered aircraft, leading to a system in which traffic would be segregated by speed class, in 3 altitude strata, with a required minimum speed for each altitude stratum. He stressed the need for one-way airways, and STOL (stub) runways. He thought that the problem of unknown or non-communicating aircraft in the TCA could be reduced, by increasing the VFR visibility requirements in TCA's to 5 miles.

Concensus:

Although no magic answers were apparent, a number of points of agreement had been arrived at independently by

the panel members. The main points are listed below; none of them were challenged from the floor.

1. Pilots and controllers are confused by the overly complex TCA/TRSA rules and procedures; simplification is desirable.

2. Pilots tend to relax their outside surveillance when they think they are under radar control.

3. Many primary radar targets are not seen by ATC at critical times.

4. The greatest proportion of near misses involves one aircraft which is not known to, or not communicating with, ATC.

5. Many VFR pilots are intimidated by TCA's and try to detour around or under them. This shifts the VFR traffic load, sometimes causing greater risk to the traffic of adjacent airports.

6. Pilots do not get enough instruction on how to cope with the ATC system. Part of the problem is that most pilots get no opportunity to study the Airmans Information Manual. Since this information is covered only sparsely, if at all, on pilot certificate examinations, many flight instructors are not fluent on it, either. Upgrading of flight instructors is necessary.

7. There appears to be no relevance in continuing to use the annual number of enplaned passengers as a criterion for flagging a specific airport as a candidate for a TCA.

8. Each airport has a different traffic problem, with different demands, constraints, and limitations, which need to be evaluated in detail before the decision is made that a TCA is warranted.

9. The FAA could use some improvement in its techniques for dealing with its users. In particular, users should be brought into the planning of a TCA at an early stage.

10. Adequate reliever airports, lighted and instrumented for night and IFR operation, would help to relieve congestion at the major hub airports.

## Report

The ATCA Study Group is drawing up its draft report for submission to the FAA. After publication, (probably in the spring of 1981) single copies of the final report are expected to be available from:

Dave Anderson
AAT-10 Federal Aviation Administration
800 Independence Ave., S.W.
Washington, DC 20590

Phone: 202-426-3540

## Application to ATC Handbook 7110.65B

The general tone of the meeting appeared to call for a simplification of TCA rules and procedures, in particular the elimination of Stage III radar service (1½ NM lateral or 500 ft. vertical separation of VFR aircraft from other VFR or IFR aircraft) within TCA's and TRSA's. Depending on how the final recommendation is worked out and accepted by the FAA, this could result in the deletion, or extensive modification, of Paragraphs 1280 through 1287 of the ATC Handbook.

There is a somewhat lesser possibility that Stage II service may also be recommended for elimination. This could call for the deletion or modification of Paragraphs 1250 through 1266 of the Handbook. Stage I has just been renamed "Basic Radar Service".

## TCA REQUIREMENTS
## from FAR 91.90

| TCA GROUP | | | REQUIREMENT |
|---|---|---|---|
| I | II | III | |
| • | • | • | Authorization from ATC prior to entry |
| • | • | | Large jets operating to or from primary airport remain above designated floor of TCA |
| • | | | A/C holds at least a Private Pilot Certificate |
| •1 | •1 | •1 | VOR/TACAN receiver |
| • | • | • | 2-way communication maintained with ATC |
| •2 | •2 | •3 | Mode 3/A 4096-code transponder |
| •2 | | •3 | Mode C altitude encoder |

Legend

1 Not required for helicopters

* 2 Not required for helicopters operating under 1000 AGL

3 Not required if 2-way communications is maintained with ATC and pilot provides position, altitude, and proposed flight path prior to entry

* Requires letter of agreement with Tower per FAR91

HELICOPTER ASSOCIATION of America

1156 15th St., N.W., Suite 610, Washington, D. C. 20005 (202) 466-2420 Telex 89615

November 3, 1980

TO: MEMBERS HAA ATC SUBCOMMITTEE
MEMBERS, HAA TERPS WORKING GROUP

CC: JOSEPH MASHMAN, Chairman, HAA IFR Committee
MEMBERS, HAA IFR COMMITTEE
ROBERT A. RICHARDSON, HAA Executive Director

FROM: GLEN A. GILBERT, Chairman, HAA ATC Subcommittee
Chairman, HAA TERPS Working Group

SUBJECT: COMBINED ATC/TERPS MEETING, JANUARY 20, 1981

1. This is an advance notice to advise you that there will be a combined ATC and TERPS meeting on Tuesday, January 20, 1981, in Anaheim, CA. during the HAA 33rd Annual Meeting and Industry Exposition. The meeting will be held from 9:00 AM to 12:00 N in the Garden Room I of the Inn at the Park, (across parking lot from Convention Center).

2. The first portion of the meeting will review the then status of a study now being commenced by the HAA for the FAA to modify (as appropriate) air traffic controller procedures (FAA Handbook 7110.65B) for the purpose of facilitating the handling of helicopter operations (IFR, HSVFR, VFR) in the ATC system. This project also may lead to correspoiding changes in the Airman's Information Manual (Basic Flight Information and ATC Procedures.) Other ATC/helicopter matters also will be discussed at the meeting.

3. In the second portion of the meeting, attendees will be briefed by FAA personnel on the then status of FAA's program for updating TERPS criteria, which are expected to lead to extensive modifications in the United States Standard for Terminal Instrument Procedures (TERPS), FAA Handbook 8260.38. The future role of the HAA TERPS Working Group in this program also will be discussed.

4. At this time, I would like to update my roster of members for the ATC Subcommittee and TERPS Working Group as well as ascertain an approximate attendance list for the January 20 meeting. Therefore, I would appreciate it if the enclosed questionnaire would be completed and sent to me by December 1st.

5. Persons currently listed on either or both rosters who do not respond will be dropped from the new rosters.

Helicopter Association of America
1156 15th Street N.W. Suite 610
Washington, D.C. 20005
202-466-2420 Telex 89-615

The Promise . . .

Fulfilled

Robert A. Richardson, Executive Director
Stephen A. Schuldenfrei, Meeting Coordinator

## HAA ATC/TERPS PROGRAM

**Room 7 - Anaheim Convention Center**
**9:00 am - 11:30 am — Tuesday, January 20, 1981**

| | | |
|---|---|---|
| 9:00 am - 9:10 am | Opening Remarks | Glen A. Gilbert<br>Chairman,<br>HAA ATC Subcommittee and<br>HAA TERPS Working Group |
| 9:10 am - 9:40 am | FAA/HAA R&D Helicopter ATC Procedures Study (FAA Handbook 7110.65B) | Raymond Hilton<br>Federal Aviation Administration,<br>Washington, DC<br>Glen A. Gilbert,<br>Members, HAA Study Group |
| 9:40 am - 10:00 am | FAA Air Traffic Service Procedures Activities | Glenn Leister<br>Federal Aviation Administration,<br>Washington, DC |
| 10:00 am - 10:15 am | Open Discussion on Future Role of HAA ATC Subcommittee | |
| 10:15 am - 10:45 am | Study of Helicopter Performance and Terminal Instrument Procedures (FAA-RD-80-58)<br>Study of Heliport Airspace and Real Estate Requirements (FAA-RD-80-107) | Glen Adams<br>Federal Aviation Administration,<br>Washington, DC |
| 10:45 am - 11:15 am | FAA Program for Revision of TERPS Manual (FAA Handbook 8260.3B) | Roger Baker<br>Federal Aviation Administration,<br>Oklahoma City, OK |
| 11:15 am - 11:25 am | Open Discussion on Future Role of HAA TERPS Working Group | |
| 11:25 am - 11:30 am | Closing Remarks | Glen A. Gilbert |

HELICOPTER ASSOCIATION of America

1156 15th St., N.W., Suite 610, Washington, D. C. 20005 (202) 466-2420 Telex 89615

January 5, 1981

TO: ATTENDEES, HAA ATC/TERPS JOINT MEETING
January 20, 1981

FROM: Glen A. Gilbert, Chairman

REFERENCE: FAA-RD-80-107
Study of Heliport Airspace and Real Estate Requirements

FAA-RD-80-58
Study of Heliport Performance and Terminal Instrument Procedures

1. Enclosed herewith are comments on the referenced documents prepared by Dick Stutz, Chairman of the HAA's Heliport/Airways Action Group (HAAG).

2. These comments should be considered in the light of the presentations at the joint ATC/TERPS meeting made by Glen Adams, FAA Washington, and Paul Rogers, FAA Oklahoma City.

3. Inputs and comments from attendees are invited.

## 5.4 Real Estate Requirements

The basic philosophy for recommendations in this section of the study is that future heliport real estate requirements accommodate all helicopters currently certificated for IFR operation in the United States. Since ADAP grants are tied to meeting requirements of the Heliport Design Guide, this would severely restrict the development of suitably small heliports in metropolitan areas for high performance helicopters in the future. An analogy in airport development would be to require all airports receiving ADAP grants to accommodate all IFR certificated airplanes, such as Boeing 747.

It is recommended that the helicopter performance requirements for each heliport be documented, as the basis of approval for specific operations, such as climb angle required within a certain distance of the edge of the take-off area rather than having a single blanket requirement for all heliports, as recommended in the report.

## 5.5 Airspace Requirements

The philosophy for recommendations here is to stay with the established minimum 20:1 IFR approach/departure/obstacle clearance surfaces established many years ago for operational helicopter of the 1960's. This will severely restrict the development of new all weather metropolitan heliports by requiring, for example, that no obstacle of more than 200 feet

height be beneath the approach-or departure surface if at ground level for a distance of 4000 feet from the take-off area. Even if the real estate were available, it permits long slow helicopter approaches and departures that could be unsatisfactory from a noise abatement point of view.

It is recommended that approach/departure obstacle clearance slope by up to at least as steep as for the present visual heliport, 8:1. This will foster the development of new smaller metropolitan heliports and high performance civil helicopters and provide orderly transition from IFR to VFR operations.

5.10 Criteria for Curved Flight Paths

The recommended double-standard-rate-of-turn at 60 knots may not be flexible enough for future operations. It is recommended that even lower speeds be included.

GENERAL COMMENTS

The overall philosophy of the study seems to be to improve the safety of operations of existing helicopters from existing heliports. This is in contrast to developing criteria for modern technology helicopter operations in the metropolitan areas of the 80's and 90's, an original goal of the FAA's Helicopter Operations Development Program.

It is recommended that the study be reoriented to develop heliport criteria to foster the safe increase of the capacity of the national airspace through modern technology all weather helicopter operations

recognizing the restraints on availability of airspace, real estate and noise prevalent in the 80's and 90's time frame.

FAA-RD-80-58 Study of Helicopter Performance and Terminal Instrument Procedures

GENERAL COMMENTS

This is a good review of current instrument certificated helicopter performance and TERPS criteria. However, as in the Study of Heliport Airspace and Real Estate Requirements the basic philosophy of increasing the capacity of the national airspace through the development of new helicopter IFR operations procedures is not really pursued. Special problems for unique steep slow approaches for helicopters and V/STOL aircraft are discussed but much needed criteria and associated helicopter performance to qualify for discrete helicopter approaches, departures and separation standards are only briefly addressed.

It is recommended that the study be expanded to include discrete helicopter terminal procedures, including not only approach angles but also approach speeds, obstacle clearance, holding patterns and separation standards that will qualify the helicopter for discrete terminal airspace. This should include approach/missed approach/departure angles of from 6 degrees at 60 knots to 12 degrees at 30 knots, which will assure at least 8:1 obstacle clearance planes at speeds 1/2 those of slowest airplanes. Such data will provide both the designers of modern technology helicopters and those who allocate real estate and airspace with valuable guidance.

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(2/20/81)

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HELICOPTER ASSOCIATION of America

1156 15th St., N.W., Suite 610, Washington, D. C. 20005 (202) 466-2420 Telex 89615

MEMORANDUM NO. 9 February 20, 1981

TO: HAA SPECIAL HELICOPTER ATC STUDY WORKING GROUP
HAA ATC SUBCOMMITTEE

CC: Ray Hilton - FAA Technical Monitor
Glenn Leister - FAA ATS Liaison

FROM: Glen A. Gilbert, Program Manager,
HAA/FAA Helicopter ATC Study Project

1. The HAA review of the FAA's Air Traffic Procedures Handbook 7110.65B has now reached the stage where inputs received from the HAA Special Helicopter ATC Study Working Group have been incorporated into a first draft report (as of 2/12/81), copy of which is forwarded herewith.

2. For those recipients of this Memo who may not be acquainted with this project, last Fall the FAA requested the HAA to undertake a detailed study of Manual 7110.65B (procedures for air traffic controllers) for the purpose of recommending any changes considered necessary to facilitate helicopter handling (IFR, VFR, special VFR) by controllers. As HAA program manager, I then set up a special HAA working group to assist in performing this task. The enclosed document is based on inputs from this Working Group.

3. In reviewing the enclosed draft, I am asking members of the ATC Study Working Group to give this draft their most careful attention and send me their final inputs no later than March 16. Please include not only any comments on the contents of the enclosure, but any other items that members think have been missed and should be included.

4. As Chairman of the HAA ATC Subcommittee of the HAA's IFR Committee, I recently requested reconfirmation of membership in this Subcommittee. On January 20, 1981, a special meeting of the Subcommittee and the HAA's TERPS Working Group (of which I also am chairman) was held at Anaheim in conjunction with the HAA's annual conference. At that time the attendees were briefed on the HAA ATC study, and I advised that the Subcommittee would be brought into the final review stage of this project. Hence, I am addressing this Memo to members on the updated ATC Subcommittee roster (35) and will appreciate any inputs they may have (same as in paragraph 3 above), also no later than March 16.

5. Utilizing inputs derived per paras 3 and 4 above, the first draft of the HAA Final Report will be sent to the FAA for review and comment. The HAA Final Report will then be turned over to the FAA by April 30.

6. Send all responses to this Memo to:

Glen A. Gilbert
2500 Virginia Ave., N. W.
Washington, D. C. 20037 Tel: (202) 965-0765

7. Fullest cooperation by all will be greatly appreciated.

GAG:md

| EXISTING | PROPOSED |
| --- | --- |
| Page 10 | |
| → 35. MINIMUM FUEL<br>If an aircraft declares a state of "minimum fuel," inform any facility to whom control jurisdiction is transferred of the minimum fuel problem and be alert for any occurrence which might delay the aircraft en route.<br>35. Note.—Use of the term "minimum fuel" indicates recognition by a pilot that his fuel supply has reached a state where, upon reaching destination, he cannot accept any undue delay. This is not an emergency situation but merely an advisory that indicates an emergency situation is possible should any undue delay occur. A minimum fuel advisory does not imply a need for traffic priority. Common sense and good judgment will determine the extent of assistance to be given in minimum fuel situations. If, at any time, the remaining usable fuel supply suggests the need for traffic priority to ensure a safe landing, the pilot should declare an emergency and report fuel remaining in minutes. | 35. (no change) |
| (insert) | 36. HELICOPTER FREQUENCY CHANGE<br>Avoid issuing a frequency change to single-piloted helicopters while taxiing, hovering, or flying near the ground. If in doubt, query the pilot as to his ability to change frequency. In an emergency or critical situation, relay the necessary control instructions until the pilot is able to change frequency.<br>36. NOTE. Most single-piloted helicopters require the use of both hands and feet to maintain control. Although control friction devices assist the pilot, changing frequency could result in loss of control. |
| 36-39. RESERVED | 37-39. RESERVED (Renumbered) |

RATIONALE: There is a need to alert controllers to the potential hazard involved when a single piloted helicopter is requested to change radio frequency when operating near the ground.

| EXISTING | PROPOSED |
|---|---|
| **Page 21** | |
| **87.a. AIRCRAFT IDENTIFICATION** | |
| (3) Type only, if no confusion or misidentification is likely. | |
| b. Air Carrier: | |
| (1) Manufacturer's name or model. | |
| (2) Add company name or other identifying features when confusion or misidentification is likely. | |
| 88.b. Examples.— | (Correction) |
| "Lockhead ten-eleven." "American seven-oh-seven." "United seven thirty-seven." | "Lockheed ten-eleven".... |
| 88.b. Note.—*TERMINAL:* Pilots of 'interchange' aircraft are expected to inform the tower on first radio contact the name of the operating company and trip number, followed by the company name as displayed on the aircraft, and aircraft type. | |
| c. General Aviation and Air Taxi: | (Inserts) |
| (1) Manufacturer's model, name or designator. | |
| (2) Add color when considered advantageous. | (3) Add HELICOPTER when considered advantageous. |
| 88.c. Examples.— | |
| "Tri-Pacer." "PA twenty-two." | |
| "Cessna three ten." "Green Apache." | "Yellow Hughes helicopter" |
| d. When issuing traffic information to aircraft cleared for a visual approach, specify the word "heavy" when you know the traffic is a heavy aircraft. | |
| 88.d. Examples.— | |
| "Heavy C one forty-one." | |
| 89-99. RESERVED | |

RATIONALE: Most helicopters make relatively small visual targets, especially when seen from front or rear. Using a descriptive term would give other pilots a useful clue as to what to look for.

## EXISTING

### Section 16. SPECIAL VFR

**470. AUTHORIZATION**

Except where prohibited by FAR 93.113, you may authorize Special VFR operations in weather conditions less than basic VFR minima only as follows:

a. Within control zones.

b. When requested by the pilot.

c. On the basis of weather conditions reported at the airport of intended landing/departure, or

470.c. Reference.—Climb to VFR, 472; Ground Visibility Below One Mile, 477.

d. When weather conditions are not reported at the airport of intended landing, and the pilot advises he is unable to maintain VFR and requests Special VFR.

*Phraseology:*

CLEARED TO ENTER/OUT OF/THROUGH CONTROL ZONE

*and, if required*

(direction) OF (airport name) AIRPORT (specified routing)

*and*

MAINTAIN SPECIAL V-F-R CONDITIONS WHILE IN CONTROL ZONE.

**471. LOCAL OPERATIONS**

Authorize local Special VFR operations for a specified period (series of landings and takeoffs, etc.) upon request, if the aircraft can be recalled when traffic or weather conditions require. Where warranted, Letters of Agreement may be consummated.

*Phraseology:*

LOCAL SPECIAL V-F-R OPERATIONS IN THE IMMEDIATE VICINITY OF (airport name) AIRPORT ARE AUTHORIZED UNTIL (time). MAINTAIN SPECIAL V-F-R CONDITIONS.

471. Reference.—7210.3—431, Appropriate Subjects.

**472. CLIMB TO VFR**

Authorize an aircraft to climb to VFR upon request if the only weather limitation is restricted visibility.

*Phraseology:*

CLIMB TO V-F-R WITHIN THE CONTROL ZONE/WITHIN (a specified distance within control zone) MILES FROM (airport name) AIRPORT, MAINTAIN SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.

## PROPOSED

### SECTION 16. FIXED-WING SPECIAL VFR (FW/SVFR)

**470. AUTHORIZATION**

Except where prohibited by FAR 93.113, you may authorize Special VFR operations for fixed-wing aircraft in weather conditions less than basic VFR minima only as follows:

a. Within control zones.

b. When requested by the pilot.

c. On the basis of weather conditions reported at the airport of intended landing/departure, or

470.c. Reference.—Climb to VFR, 472; Ground Visibility Below One Mile, 477.

d. When weather conditions are not reported at the airport of intended landing, and the pilot advises he is unable to maintain VFR and requests Special VFR.

*Phraseology:*

CLEARED TO ENTER/OUT OF/THROUGH CONTROL ZONE

*and, if required*

(direction) OF (airport name) AIRPORT (specified routing)

*and*

MAINTAIN SPECIAL V-F-R CONDITIONS WHILE IN CONTROL ZONE.

**471. LOCAL OPERATIONS**

Authorize local Special VFR operations for fixed-wing aircraft during a specified period (series of landings and takeoffs, etc.) upon request, if the aircraft can be recalled when traffic or weather conditions require. Where warranted, Letters of Agreement may be consummated.

*Phraseology:*

LOCAL SPECIAL V-F-R OPERATIONS IN THE IMMEDIATE VICINITY OF (airport name) AIRPORT ARE AUTHORIZED UNTIL (time). MAINTAIN SPECIAL V-F-R CONDITIONS.

471. Reference.—7210.3—431, Appropriate Subjects.

**472. CLIMB TO VFR**

Authorize a fixed-wing aircraft to climb to VFR upon request if the only weather limitation is restricted visibility.

*Phraseology:*

CLIMB TO V-F-R WITHIN THE CONTROL ZONE/WITHIN (a specified distance within control zone) MILES FROM (airport name) AIRPORT, MAINTAIN SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.

## EXISTING

### 473. SEPARATION

Apply approved separation between:

a. Special VFR aircraft.

b. Special VFR aircraft and IFR aircraft.

473. Note.—Approved separation is that prescribed for IFR and Special VFR in 180 and 474. Radar vectors are authorized as prescribed in 880. (See paragraph 1.h.)

### 474. ALTITUDE ASSIGNMENT

Do not assign a fixed altitude when applying vertical separation, but clear the Special VFR aircraft at or below an altitude which is at least 500 feet below any conflicting IFR traffic but not below the minimum safe altitude prescribed in FAR 91.79.

474. Note 1.—Special VFR aircraft are not assigned fixed altitudes because of the clearance from clouds requirement.

474. Note 2.—The minimum safe altitudes are (1) over congested areas, an altitude at least 1000 feet above the highest obstacle, and (2) over other than congested areas, an altitude at least 500 feet above the surface.

*Phraseology:*
MAINTAIN SPECIAL V-F-R CONDITIONS AT OR BELOW (altitude).

### 475. SPECIAL VFR HELICOPTER SEPARATION

Control a Special VFR helicopter by Special VFR procedures unless other procedures are contained in a Letter of Agreement.

475. Note.—Control of IFR helicopters is governed by nonradar or radar procedures and minima.

475. Reference.—TERMINAL: Special VFR Helicopter Separation, Chap. 5, Sec. 14.

### 476. PRIORITY

a. FW/SVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

476 a. Example 1.—A FW/SVFR aircraft has been cleared to enter the control zone and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the FW/SVFR aircraft is allowed to proceed to the airport and land, rather than leave the control zone or be repositioned to provide IFR priority.

## PROPOSED

### 473. SEPARATION

Apply approved separation between:

a. Special VFR aircraft.

b. Special VFR aircraft and IFR aircraft.

473. Note.—Approved separation is that prescribed for IFR and Special VFR in 180 and 474. Radar vectors are authorized as prescribed in 880. (See paragraph 1.h.)

### 474. ALTITUDE ASSIGNMENT

Do not assign a fixed altitude when applying vertical separation, but clear the FW/VFR VFR aircraft at or below an altitude which is at least 500 feet below any conflicting IFR traffic but not below the minimum safe altitude prescribed in FAR 91.79.

*Phraseology:*
MAINTAIN SPECIAL V-F-R CONDITIONS AT OR BELOW (altitude).

474. Note 1.—Special VFR aircraft are not assigned fixed altitudes because of the clearance from clouds requirement.

474. Note 2.—The minimum safe altitudes are (1) over congested areas, an altitude at least 1,000 feet above the highest obstacle, and (2) over other than congested areas, an altitude at least 500 feet above the surface.

Delete (goes in HSVFR section)

### 475. PRIORITY

a. FW/SVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

475.a. Example 1.-A FW/SVFR aircraft has been cleared to enter the control zone and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the FW/SVFR aircraft is allowed to proceed to the airport and land, rather than leave the control zone or be repositioned to provide IFR priority.

## EXISTING

476.a. Example 2.—A FW/SVFR aircraft is number one for takeoff and located in such a position that the number two aircraft, an IFR flight, cannot taxi past to gain access to the runway. Less overall delay might accrue to the IFR aircraft by releasing the FW/SVFR departure rather than by having the aircraft taxi down the runway to a turnoff point so that the IFR aircraft could be released first.

476.a. Note.—The priority afforded IFR aircraft over FW/SVFR aircraft is not intended to be so rigidly applied that it causes grossly inefficient use of airspace. If better overall efficiency will be gained thereby, the controller has the prerogative of allowing completion of the FW/SVFR operation already in progress when an IFR aircraft becomes a factor.

b. When clearance cannot be granted for a FW/SVFR flight because of IFR traffic, inform the aircraft of the anticipated delay. Do not issue EAC, EFC, or expected departure time.

*Phraseology:*

EXPECT (number) MINUTES DELAY, (additional instructions as necessary).

### 477. GROUND VISIBILITY BELOW ONE MILE

When the ground visibility is officially reported at an airport as less than 1 mile, treat requests for Special VFR operations at that airport by other than helicopters as follows:

477. Note.—Far 91 does not prohibit helicopter Special VFR flights when visibility is less than 1 mile.

a. Inform departing aircraft that ground visibility is less than 1 mile and that a clearance cannot be issued.

b. Inform arriving aircraft, operating outside of the control zone, that ground visibility is less than 1 mile and that, unless an emergency exists, a clearance cannot be issued.

c. Inform arriving aircraft, operating within the control zone, that ground visibility is less than 1 mile, and ask if the aircraft can depart the control zone with a flight visibility of at least 1 mile. If the reply is "yes," issue a clearance out of control zone. If the reply

## PROPOSED

475.a. Example 2.—A FW/SVFR aircraft is number one for takeoff and located in such a position that the number two aircraft, an IFR flight, cannot taxi past to gain access to the runway. Less overall delay might accrue to the IFR aircraft by releasing the FW/SVFR departure rather than by having the aircraft taxi down the runway to a turnoff point so that the IFR aircraft could be released first.

475.a. Note.—The priority afforded IFR aircraft over FW/SVFR aircraft is not intended to be so rigidly applied that it causes grossly inefficient use of airspace. If better overall efficiency will be gained thereby, the controller has the prerogative of allowing completion of the FW/SVFR operation already in progress when an IFR aircraft becomes a factor.

b. When clearance cannot be granted for a FW/SVFR flight because of IFR traffic, inform the aircraft of the anticipated delay. Do not issue EAC, EFC, or expected departure time.

*Phraseology:*

EXPECT (number) MINUTES DELAY, (additional instructions as necessary).

### 476. GROUND VISIBILITY BELOW ONE MILE

When the ground visibility is officially reported at an airport as less than 1 mile, treat requests for FW/SVFR operations at that airport as follows:

→ Delete (goes in HSVFR section)

a. Inform departing aircraft that ground visibility is less than 1 mile and that a clearance cannot be issued.

b. Inform arriving aircraft, operating outside of the control zone, that ground visibility is less than 1 mile and that, unless an emergency exists, a clearance cannot be issued.

c. Inform arriving aircraft, operating within the control zone, that ground visibility is less than 1 mile, and ask if the aircraft can depart the control zone with a flight visibility of at least 1 mile. If the reply is "yes," issue a clearance out of control zone. If the reply

## EXISTING

is "no," or an emergency exists, issue a clearance as soon as traffic conditions permit.

d. Authorize scheduled air carrier aircraft in the United States to conduct operations if ground visibility is not less than ½ statute mile.

477d. Note.—FAR 121 permits landing or take-off by domestic scheduled air carriers where a local surface restriction to visibility is not less than ½ statute mile, provided all turns after takeoff or before landing and all flights beyond 1 statute mile from the airport boundary can be accomplished above or outside the area so restricted. The pilot is solely responsible for determining if the nature of the visibility restriction will permit compliance with the provisions of FAR 121.

e. Clear an aircraft to fly through the control zone if he reports flight visibility is at least 1 statute mile.

### 478. FLIGHT VISIBILITY BELOW ONE MILE

When weather conditions are not officially reported at an airport and the pilot advises the flight visibility is less than 1 statute mile, treat requests for Special VFR operations at that airport by other than helicopters as follows:

478. Note.—FAR 91 prescribes use of officially reported ground visibility at airports where it is provided, and landing or take-off "flight visibility" where it is not, as the governing ground visibility for basic and Special VFR operations.

a. Inform departing aircraft that a clearance cannot be issued.

b. Inform arriving aircraft operating outside of the control zone that a clearance cannot be issued unless an emergency exists.

c. Ask an arriving aircraft operating within a control zone if he can depart the control zone with a flight visibility of at least 1 statute mile. If the aircraft cannot depart the control zone accordingly, or an emergency exists, issue a clearance as soon as traffic conditions permit.

### 479. RESERVED

## PROPOSED

is "no," or an emergency exists, issue a clearance as soon as traffic conditions permit.

d. Authorize scheduled air carrier aircraft in the United States to conduct operations if ground visibility is not less than ½ statute mile.

476.d. Note.—FAR 121 permits landing or take-off by domestic scheduled air carriers where a local surface restriction to visibility is not less than ½ statute mile, provided all turns after takeoff or before landing and all flights beyond 1 statute mile from the airport boundary can be accomplished above or outside the area so restricted. The pilot is solely responsible for determining if the nature of the visibility restriction will permit compliance with the provisions of FAR 121.

e. Clear an aircraft to fly through the control zone if he reports flight visibility is at least 1 statute mile.

### 477. FLIGHT VISIBILITY BELOW ONE MILE

When weather conditions are not officially reported at an airport and the pilot advises the flight visibility is less than 1 statute mile, treat requests for FW/SVFR operations at that airport as follows:

477. Note.—FAR 91 prescribes use of officially reported ground visibility at airports where it is provided, and landing or take-off "flight visibility" where it is not, as the governing ground visibility for basic and Special VFR operations.

a. Inform departing aircraft that a clearance cannot be issued.

b. Inform arriving aircraft operating outside of the control zone that a clearance cannot be issued unless an emergency exists.

c. Ask an arriving aircraft operating within a control zone if he can depart the control zone with a flight visibility of at least 1 statute mile. If the aircraft cannot depart the control zone accordingly, or an emergency exists, issue a clearance as soon as traffic conditions permit.

## EXISTING

**470. AUTHORIZATION**

Except where prohibited by FAR 93.113, you may authorize Special VFR operations in weather conditions less than basic VFR minima only as follows:

a. Within control zones.

b. When requested by the pilot.

c. On the basis of weather conditions reported at the airport of intended landing/departure, or

470.c. Reference.—Climb to VFR, 472; Ground Visibility Below One Mile, 477.

d. When weather conditions are not reported at the airport of intended landing, and the pilot advises he is unable to maintain VFR and requests Special VFR.

*Phraseology:*

CLEARED TO ENTER/OUT OF/THROUGH CONTROL ZONE

*and, if required*

(direction) OF (airport name) AIRPORT (specified routing)

*and*

MAINTAIN SPECIAL V-F-R CONDITIONS WHILE IN CONTROL ZONE.

477. Note.—Far 91 does not prohibit helicopter Special VFR flights when visibility is less than 1 mile.

## PROPOSED

SECTION 18.

HELICOPTER SPECIAL VFR (HSVFR)

482. AUTHORIZATION

You may authorize helicopter Special VFR (HSVFR) operations in weather conditions less than basic VFR minima only as follows:

a. Within control zones.

b. When requested by the pilot.

c. On the basis of weather conditions reported at the airport of intended landing/departure, or

482.c. Reference.-Climb to VFR, 483.

d. When weather conditions are not reported at the airport of intended landing, and the pilot advises he is unable to maintain VFR and requests HSVFR.

Phraseology:

CLEARED TO ENTER/OUT OF/THROUGH CONTROL ZONE

and, if required

(direction) OF (airport name) AIRPORT (specified routing)

and

MAINTAIN HELICOPTER SPECIAL V-F-R CONDITIONS WHILE IN CONTROL ZONE.

482.d. NOTE 1.-FAR 91 does not prohibit HSVFR flights when visibility is less than one mile; HSVFR operations require that the visibility be high enough to enable the pilot, by visual reference to the surface, to follow a desired track, and to identify reporting and holding fixes.

EXISTING

PROPOSED

**472. CLIMB TO VFR**

**Authorize an aircraft to climb to VFR upon request if the only weather limitation is restricted visibility.**

***Phraseology:***

**CLIMB TO V-F-R WITHIN THE CONTROL ZONE/WITHIN (a specified distance within control zone) MILES FROM (airport name) AIRPORT, MAINTAIN SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.**

482.d. NOTE 2.-Although HSVFR clearances authorize flight only within control zones, a pilot also may elect to operate HSVFR outside of the control zone.

483. CLIMB TO VFR

Authorize a helicopter to climb to VFR upon request if the only weather limitation is restricted visibility.

Phraseology:

CLIMB TO V-F-R WITHIN THE CONTROL ZONE/WITHIN (a specified distance within control zone) MILES FROM 9airport name) AIRPORT, MAINTAIN SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.

## EXISTING

### 473. SEPARATION

Apply approved separation between:

a. Special VFR aircraft.

b. Special VFR aircraft and IFR aircraft.

473. Note.—Approved separation is that prescribed for IFR and Special VFR in 100 and 474. Radar vectors are authorized as prescribed in 630. (See paragraph 1.h.)

### 476. PRIORITY

a. FW/SVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

476.a. Example 1.—A FW/SVFR aircraft has been cleared to enter the control zone and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the FW/SVFR aircraft is allowed to proceed to the airport and land, rather than leave the control zone or be repositioned to provide IFR priority.

## PROPOSED

### 484. ALTITUDE ASSIGNMENT

Do not assign a fixed altitude when applying vertical separation, but clear the HSVFR aircraft at or below an altitude which is at least 500 feet below any conflicting IFR altitude.

Phraseology:

MAINTAIN SPECIAL VFR CONDITIONS AT OR BELOW (altitude)

### 485. PRIORITY

a. HSVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

485.a. Example 1.-A HSVFR aircraft has been cleared to enter the control zone and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the HSVFR aircraft is allowed to proceed to the airport and land, rather than leave the control zone or be repositioned to provide IFR priority.

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RATIONALE: The rationale for the proposed paragraphs 470 through 487 is the need for splitting the present Special VFR section into separate sections covering fixed-wing special VFR (FW/SVFR) and helicopter special VFR (HSVFR) procedures, in an effort to clarify their application by controllers. Paragraph 487 was modified slightly to cover the separation of HSVFR from IFR helicopter traffic (not previously covered).

EXISTING

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### 1140. APPLICATION

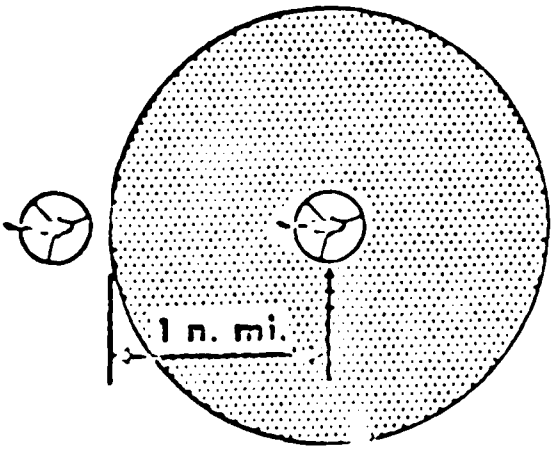
Control a special VFR helicopter by visual separation or special VFR procedures unless local procedures are contained in a Letter of Agreement.

1140 Note.—Control of IFR helicopters is governed by IFR or radar procedures and minima.

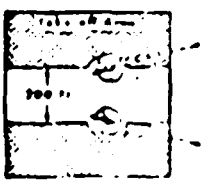
### 1141. LOCAL PROCEDURES

At locations where the volume or complexity of helicopter operations warrants, a Letter of Agreement shall specify that special VFR helicopters are required to maintain visual reference to the surface and the traffic patterns, routes and reporting or holding fixes necessary to achieve separation, in accordance with the following minima:

a. Between special VFR helicopters—*1 mile.* You may, however, use *200 feet* if they are departing simultaneously on diverging courses and you can determine this minimum by reference to the surface markings or you instruct one to remain at least *200 feet* from the other.




1141.a Illustration 1




1141.a Illustration 2

PROPOSED

### 486. APPLICATION

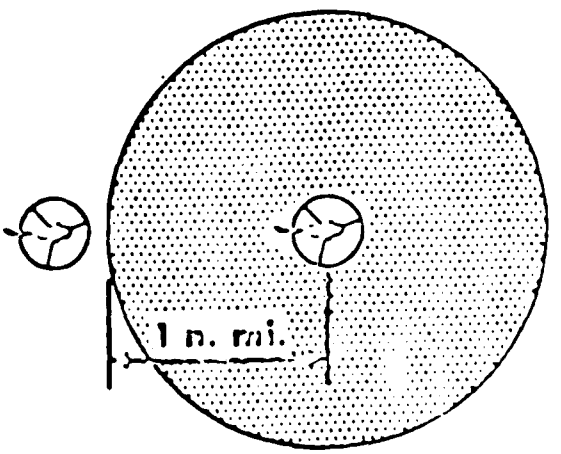
Control a special VFR helicopter by visual separation or special VFR procedures unless local procedures are contained in a Letter of Agreement.

486. Note.—Control of IFR helicopters is governed by IFR or radar procedures and minima.

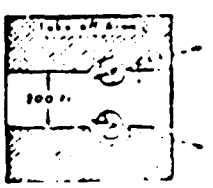
### 487. LOCAL PROCEDURES

At locations where the volume or complexity of helicopter operations warrants, a Letter of Agreement shall specify that special VFR helicopters are required to maintain visual reference to the surface and the traffic patterns, routes and reporting or holding fixes necessary to achieve separation, in accordance with the following minima:

a. Between special VFR helicopters—*1 mile.* You may, however, use *200 feet* if they are departing simultaneously on diverging courses and you can determine this minimum by reference to the surface markings or you instruct one to remain at least *200 feet* from the other.




487.a Illustration 1

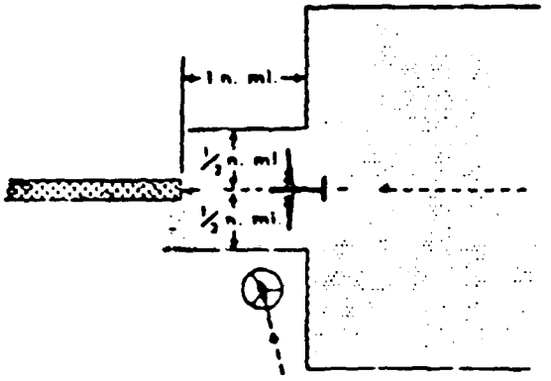



487.a Illustration 2

## EXISTING

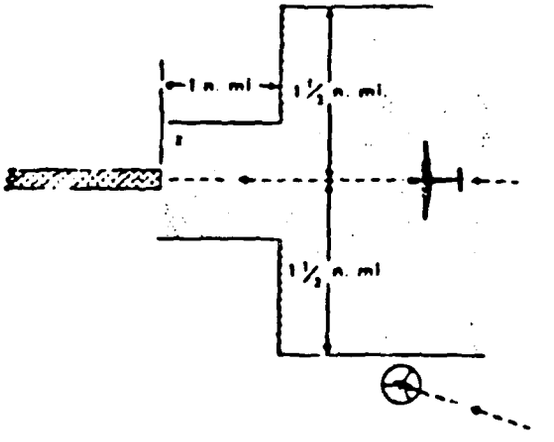
b. Between an arriving Special VFR helicopter and an arriving fixed wing IFR aircraft executing a straight-in approach:

(1) If the fixed wing aircraft is less than 1 mile from the landing threshold—½ *mile.*




1141.b (1) Illustration

(2) If the fixed wing aircraft is 1 mile or more from the landing threshold—*1½ miles.*




1141 b (2) Illustration

c. Between an arriving fixed wing IFR aircraft executing a circling approach or a missed approach and an arriving Special VFR helicopter - *2 miles.*

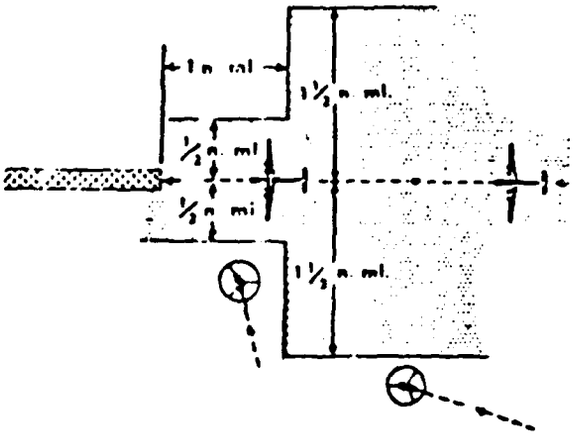
## PROPOSED

(487 continued)

b. Between an arriving Special VFR helicopter and an arriving fixed wing IFR aircraft executing a straight-in approach:

(1) If the fixed wing aircraft is less than 1 mile from the landing threshold—½ *mile.*

(2) If the fixed wing aircraft is 1 mile or more from the landing threshold- *1½ miles.*



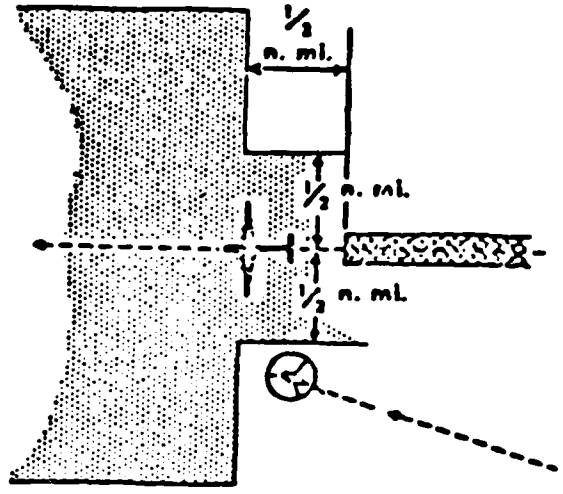

487.b. Illustration

c. Between an arriving fixed wing IFR aircraft executing a circling approach or a missed approach and an arriving Special VFR helicopter- *2 miles.*

## EXISTING

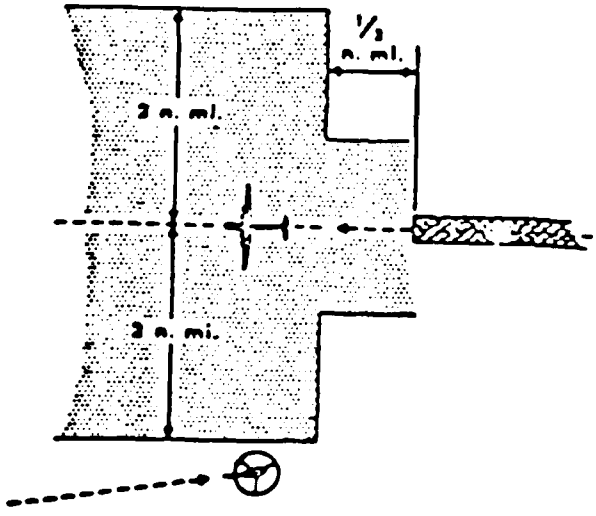
d. Between a departing fixed wing IFR aircraft and a Special VFR helicopter:

(1) If the fixed wing aircraft is less than ½ mile beyond the runway end—½ mile.



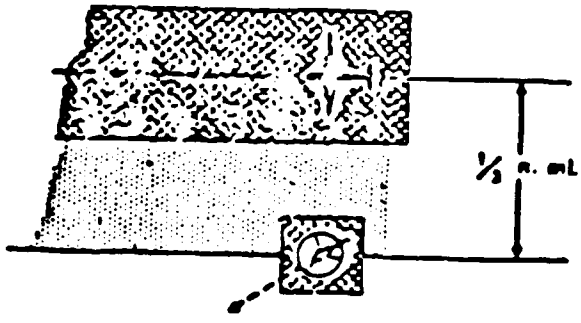

1141.d.(1) Illustration

(2) If it is ½ mile or more beyond the runway end—2 miles.




1141.d.(2) Illustration

e. Between a departing Special VFR helicopter and a departing fixed wing IFR aircraft—½ mile, if courses diverge after takeoff.

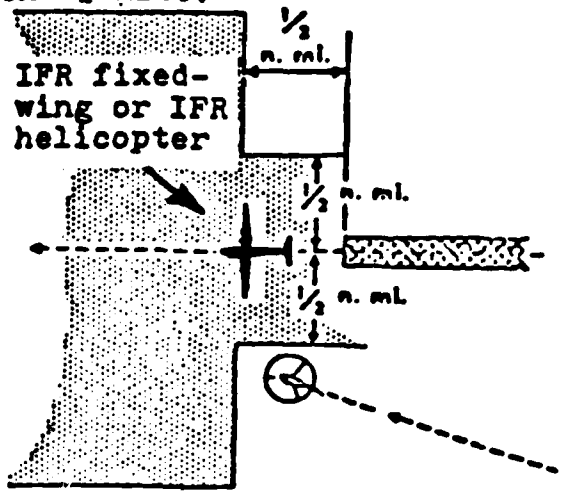



1141.e. Illustration

## PROPOSED

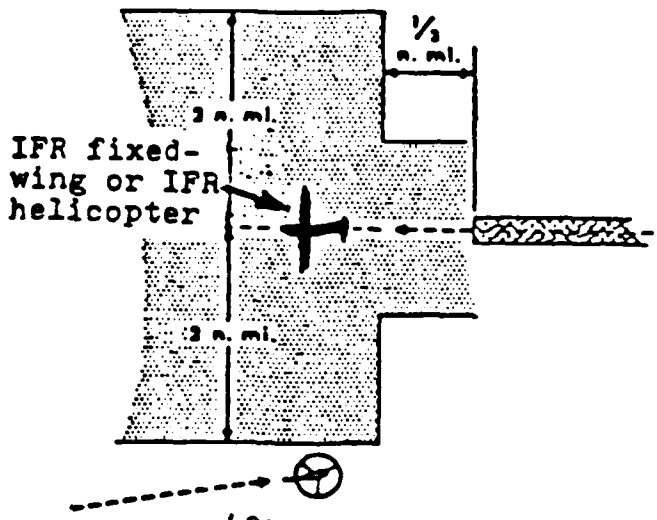
d. Between a departing IFR aircraft and a Special VFR helicopter:

(1) If the IFR aircraft is less than ½ mile beyond the runway end-½ mile.



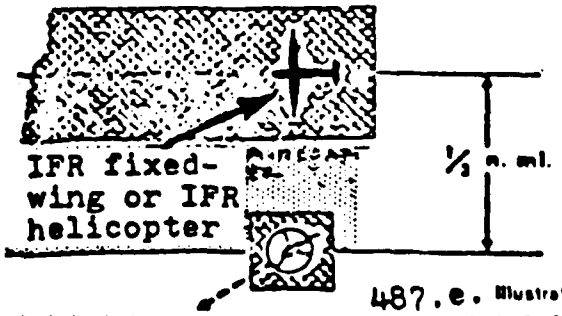

487.d.(1) Illustration

(2) If it is ½ mile or more beyond the runway end-2 miles.




487.d.(2) Illustration

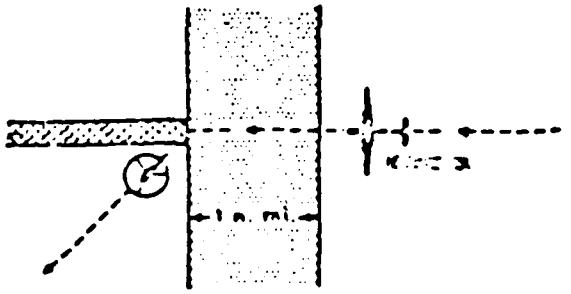
e. Between a departing Special VFR helicopter and a departing IFR aircraft-½ mile, if courses diverge after takeoff.




487.e. Illustration

## EXISTING

f. Between an arriving fixed wing IFR aircraft and a Special VFR helicopter—sufficient separation to assure that the helicopter takes off on a diverging course before the arriving aircraft is *1 mile* from the airport.

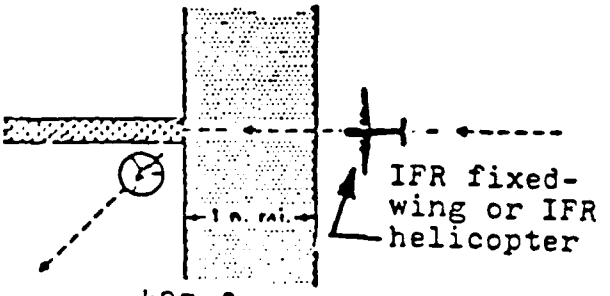



1141.f. Illustration

1142-1149. RESERVED

## PROPOSED

f. Between an arriving IFR aircraft and a Special VFR helicopter-sufficient separation to assure that the helicopter takes off on a diverging course before the arriving aircraft is 1 mile from the airport.




487.f. Illustration

| EXISTING | PROPOSED |
| --- | --- |
| 822. MINIMA<br><br>Unless a pilot concurs in the use of a lower speed, use the following minima:<br><br>a. To aircraft operating between FL 280 and 10,000 feet, a speed not less than 250 knots.<br><br>b. To turbojet aircraft operating below 10,000 feet:<br><br>(1) A speed not less than 210 knots, except:<br><br>(2) Within 20 miles of the airport of intended landing, a speed not less than 170 knots.<br><br>c. Propeller aircraft within 20 miles of the airport of intended landing, a speed not less than 150 knots.<br><br>d. Departures, a speed not less than 230 knots. | 822. (no change) |
| (insert) ← | e. Helicopters flying on instruments, a speed not less than 60 knots. |

RATIONALE: Helicopter pilots do not like to fly on instruments at speeds less than 60 knots, due to possible control difficulties at lower speeds with present instrumentation. Once in the clear, with outside visual reference to the surface, they can slow to lower speeds if necessary.

| EXISTING | PROPOSED |
| --- | --- |
| 952. STOL RUNWAYS | 962. STOL RUNWAYS |
| Use STOL runways as follows: | Use STOL runways as follows: |
| a. A designated STOL runway may be assigned only when requested by the pilot or as specified in a Letter of Agreement with an aircraft operator. | a. A designated STOL runway may be assigned to a fixed-wing aircraft only when requested by the pilot or as specified in a Letter of Agreement with an aircraft operator. |
| | b. designated STOL runway may be assigned to a helicopter at any time. |
| b. Issue the measured STOL runway length if the pilot requests it. | c. Issue the measured STOL runway length if the pilot requests it. |

RATIONALE: It is advantageous to keep helicopter and fixed-wing traffic separate, wherever possible. There is no danger of a helicopter overshooting a STOL runway. Even though helicopters do not normally require the use of a runway, there is no reason to prohibit them from using a STOL runway because of its limited dimensions.

EXISTING

**972. TAXI INFORMATION**

**When taxi information is required, issue the following, as appropriate, in concise and easy to understand terms:**

**a. Route for the aircraft to follow on the movement area.**

**972.a. Note.—Movement of aircraft within loading, maintenance, or parking areas is the responsibility of the pilot, aircraft operator, or airport management.**

*Phraseology:*
TAXI:
VIA (route) *or* ON (runway number or taxiway, etc.) *or* TO (location) *or* (direction) *or* ACROSS RUNWAY (runway number).
CONTINUE TAXIING:
VIA (route) *or* ON (runway number or taxiway, etc.) *or* (direction).

**972.a. Examples.—**

**"Turn right at first intersection." "Taxi straight ahead to end of runway, then turn left."**

**b. Instructions to hold and traffic information as necessary.**

**972.b. Note.—When authorizing an aircraft to "taxi to" an assigned takeoff runway, the absence of holding instructions authorizes the aircraft to "cross" all runways which the taxi route intersects except the assigned takeoff runway. It does not include authorization to "taxi onto" or "cross" the assigned takeoff runway at any point. In absence of holding instructions, a clearance to "taxi to" any point other than an assigned takeoff runway, is a clearance to cross all taxiways and runways that intersect the taxi route to that point.**

*Phraseology:*
HOLD:
SHORT OF (location), *or* ON (taxi strip, run-up pad, etc.), *and if necessary* TRAFFIC (traffic information), *or* FOR (reason).

**c. Instructions to expedite a taxiing aircraft.**

*Phraseology:*
TAXI WITHOUT DELAY (traffic if necessary).

PROPOSED

**972. TAXI INFORMATION**

**When taxi information is required, issue the following, as appropriate, in concise and easy to understand terms:**

**a. Route for the aircraft to follow on the movement area.**

**972.a. Note.—Movement of aircraft within loading, maintenance, or parking areas is the responsibility of the pilot, aircraft operator, or airport management**

*Phraseology:*
TAXI:
VIA (route) *or* ON (runway number or taxiway, etc.) *or* TO (location) *or* (direction) *or* ACROSS RUNWAY (runway number).
CONTINUE TAXIING:
VIA (route) *or* ON (runway number or taxiway, etc.) *or* (direction).

**972.a. Examples.—**

**"Turn right at first intersection." "Taxi straight ahead to end of runway, then turn left."**

**b. Instructions to hold and traffic information as necessary.**

**972.b. Note.—When authorizing an aircraft to "taxi to" an assigned takeoff runway, the absence of holding instructions authorizes the aircraft to "cross" all runways which the taxi route intersects except the assigned takeoff runway. It does not include authorization to "taxi onto" or "cross" the assigned takeoff runway at any point. In absence of holding instructions, a clearance to "taxi to" any point other than an assigned takeoff runway, is a clearance to cross all taxiways and runways that intersect the taxi route to that point.**

*Phraseology:*
HOLD:
SHORT OF (location), *or* ON (taxi strip, run-up pad, etc.), *and if necessary* TRAFFIC (traffic information), *or* FOR (reason).

**c. Instructions to expedite a taxiing aircraft.**

*Phraseology:*
TAXI WITHOUT DELAY (traffic if necessary).

| EXISTING | PROPOSED |
| --- | --- |
| | 972.d. When necessary to clear a helicopter to ground taxi using wheels, issue instructions using the phraseology in paragraphs a, b, or c above. For helicopters with skid-type landing gear, use paragraph e. below. |
| | 972.d. NOTE.-Ground taxi uses less fuel and minimizes air turbulence. However, under certain conditions, such as rough/soft/uneven terrain, it may become necessary for a helicopter to air taxi for safety reasons. Helicopters with articulating rotors (usually 3 or more main rotor blades) are subject to ground resonance and may, on rare occasions, suddenly lift off the ground to avoid severe damage. |
| (insert) | 972.e. When necessary to clear a helicopter to proceed from one point to another via flight at or below 100 feet AGL, use the appropriate phraseology except as follows: |
| | Phraseology: |
| | AIR TAXI |
| | VIA (direct or route prescribed) |
| | TO (location, heliport, helipad, movement/operating areas, inactive/active runway) |
| | CAUTION (wake turbulence, construction equipment) |
| | LAND AND CONTACT TOWER OR HOLD FOR (reason, landing/taxiing aircraft, release, clearance to cross runway, etc.) |

EXISTING

PROPOSED

(972.e. - continued)

Helicopters with articulating rotors (usually 3 or more main rotor blades) are subject to ground resonance and may, on rare occasions, suddenly lift off the ground to avoid severe damage.

f. When necessary to clear a helicopter to proceed from one point to another via flight at or below 100 feet AGL, use the appropriate phraseology except as follows:

Phraseology:

AIR TAXI

VIA (direct or route prescribed)

TO (location, heliport, helipad, movement/operating areas, inactive/active runway)

CAUTION (wake turbulence, construction equipment)

LAND AND CONTACT TOWER OR HOLD FOR (reason, landing/taxiing aircraft, release, clearance to cross runway, etc.)

972.f. NOTE.-The term AIR TAXI authorizes a helicopter to be operated at a speed determined to be safe by the pilot and at an altitude of not more than 100 feet AGL. AIR TAXI is the preferred method of helicopter movement on airports, if traffic conditions permit.

972.f. Reference - 7110.65, 1103, 1105, Pilot/Controller Glossary (air taxi), AIM.

g. The downwash of a hovering helicopter generates strong surface velocities out to a radius of 3 times the rotor diameter. Where possible, this much clearance should be kept between the hovering helicopter and parked light aircraft.

EXISTING

PROPOSED

975. Taxi information for single piloted helicopters -- Issue taxi information to helicopters as in 972 above and if the helicopter requires no further taxi instructions, instruct the pilot to monitor/contact tower on the appropriate frequency.

975. NOTE.-This procedure enables a single pilot to set his radio before liftoff and thereby avoid having to land before changing to the tower frequency.

975. Reference - 7110.65 - 35.

976-979. RESERVED

## EXISTING

**995. TAKEOFF CLEARANCE**

**Issue takeoff clearance.**

*Phraseology:*

CLEARED FOR TAKEOFF.

995. Note.—Turbine-powered aircraft may be considered ready for takeoff when they reach the runway, unless they advise otherwise.

*USA/USAF/USN:* Issue surface wind and takeoff clearance to aircraft.

*Phraseology:*

WIND (surface wind in direction and velocity). CLEARED FOR TAKEOFF.

(insert)

## PROPOSED

995. (no change)

996. TAKEOFF CLEARANCE FOR HELICOPTERS

a. Issue takeoff clearance for helicopter, from any point on the airport which is not prohibited from such use, provided the helicopter is visible to the tower. Obtain prior approval of the ground controller when the takeoff point is other than an active runway, heliport, helipad, or designated helicopter departure area. Include wind direction and velocity unless this requirement is specifically eliminated by a Letter of Agreement.

996.a. NOTE 1. - Whenever possible issue takeoff clearance in lieu of extended ground or air taxi operations.

996.a. NOTE 2. - Most helicopter pilots will not take off downwind if the wind velocity exceeds 5 knots.

Phraseology:

CLEARED FOR TAKEOFF (wind direction and velocity, unless requirement specifically eliminated by Letter of Agreement).

AIR TAXI TO (location within airport boundary).

HOLD SHORT OF (runway, taxiway, ramp, or other point).

(Code name of route specified in Letter of Agreement) DEPARTURE APPROVED.

(insert continued on next page)

EXISTING

PROPOSED

(insert) ←

b. Issue takeoff approval when a helicopter requests takeoff clearance from:

(1) An area not visible from the tower.

(2) An area not specifically designated for but not prohibited from helicopter use.

(3) An unlighted area at night.

Phraseology:

NOT IN SIGHT. DEPARTURE AS REQUESTED APPROVED (wind direction and velocity, if required)

995. CANCELLATION OF TAKEOFF CLEARANCE

Cancel a previously issued clearance for takeoff and inform the pilot of the reason, if circumstances require.

*Phraseology:*

CANCEL TAKEOFF CLEARANCE (reason)

← 997. (Renumber existing paragraph 996).

997-1009. RESERVED ← 998-1009 RESERVED (renumber)

RATIONALE: There is a need to establish helicopter departure procedures from areas other than active runways.

**EXISTING**

**1020. LANDING CLEARANCE**

Issue landing clearance. Restate the landing runway whenever there is a possibility of a conflict with another aircraft which is using or is planning to use another runway.

*Phraseology:*

CLEARED TO LAND

*or*

CLEARED TO LAND RUNWAY (designator).

*USA/USAF/USN*

Issue surface wind and landing clearance. Restate the landing runway whenever there is a possibility of a conflict with another aircraft which is using or is planning to use another runway.

*Phraseology:*

WIND (surface wind direction and velocity), CLEARED TO LAND

*or*

WIND (surface wind direction and velocity), CLEARED TO LAND RUNWAY (designator).

**1021. LANDING CLEARANCE WITHOUT VISUAL OBSERVATION**

When an arriving aircraft reports at a position where he should be seen but has not been visually observed, advise the aircraft as a part of the landing clearance that it is not in sight and restate the landing runway.

**PROPOSED**

**(Renumber to 1020.a)**

**(insert)**

**1020.b. Issue landing clearance for helicopters, to any point on the airport which is not prohibited for such use, provided the landing point is visible from the tower. Obtain prior approval of Ground Controller when landing point will be other than active runway. Include wind direction and velocity if landing will be made downwind.**

**Phraseology:**

**REQUESTED LANDING AREA NOT VISIBLE.**

**LANDING AS REQUESTED APPROVED.**

---

**RATIONALE:** Helicopters do not require a runway for landing. It is usually advantageous to separate helicopter and fixed-wing traffic on different flight paths. Landing as near as practicable to final destination on airport saves time and fuel for helicopters.

EXISTING

1025. **CLOSED TRAFFIC**

Approve/disapprove pilot requests to remain in closed traffic for successive operations subject to local traffic conditions.

*Phraseology:*

LEFT RIGHT (if required) CLOSED TRAFFIC APPROVED. REPORT (position if required)

*or*

UNABLE CLOSED TRAFFIC (additional information as required)

(insert)

1027-1039. RESERVED

PROPOSED

1027. HELICOPTER TRAFFIC PATTERNS

a. Approve helicopter traffic pattern operations based on takeoff/landing points other than active runways, when use of runways is not desirable due to traffic volume or noise considerations, in accordance with the following:
(1) when requested by pilot;
(2) when authorized by a Letter of Agreement with the operator.

b. When operations are not covered by Letter of Agreement, issue sufficient instructions to avoid interference between traffic pattern operations and other traffic movements.

c. Control, restrict, or cancel operations in helicopter traffic pattern in order to prevent delays to itinerant traffic.

d. Instruct pilots using the helicopter traffic pattern to maintain visual separation from other helicopters operating in the same pattern. If this provision is a part of the Letter of Agreement, it need not be issued to individual aircraft.

1027. NOTE. - Most helicopter cockpits are configured for the pilot to occupy the right seat. This factor makes the use of right-hand patterns preferable in the interests of cockpit visibility.

1028-1039 RESERVED (renumbered)

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RATIONALE: There is a need to establish procedures for helicopter operations in closed patterns, and to clarify why right hand patterns are preferable for most helicopters.

HELICOPTER ASSOCIATION of America

1156 15th St., N.W., Suite 610, Washington, D. C. 20005 (202) 466-2420 Telex 89615

February 20, 1981

MEMORANDUM NO. 10

TO: HAA SPECIAL HELICOPTER ATC STUDY WORKING GROUP
HAA ATC SUBCOMMITTEE

CC: Ray Hilton - FAA Technical Monitor
Glenn Leister - FAA ATS Liaison

FROM Glen A. Gilbert, Program Manager,
HAA/FAA Helicopter ATC Study Project

1. To supplement my Memo No. 9, I am also enclosing copies of the following FAA Air Traffic Service Docments:

a) Speech on January 20, 1981, by Glenn A Leister, FAA Air Traffic Specialist, FAA Air Traffic Service (AAT-320.10) presented before the HAA joint ATC/TERPS meeting at the Annual HAA (HAI) Convention at Anaheim.

b) Summary of the FAA ATS Proposed Terminal ATC Procedures for Helicopters, Handbook 7110.65B, dated 7/22/80.

c) FAA ATS ATC 7110.65B Proposals to HAA (dates during latter part of 1980).

2. Please review these documents carefully in relation to the draft documentation sent with my Memo No. 9. All combined inputs should be sent in to me by March 16 per my Memo No. 9.

3. This is an ideal opportunity for all interested in helicopter/ATC procedural interface to express their views.

GAG:md
Encl.

HAA ATC/TERPs
1/22/81

# IMPROVING ATC SERVICE FOR HELICOPTERS

Last July, the Air Traffic Service initiated a series of proposed revisions to the ATC Controller Handbook and the Pilot-Controller Glossary. These proposals were sent to industry/user organizations, the military services and our FAA Regional Offices for comments and recommendations. The basis for this effort was an awareness of the need, brought about through meetings such as HAA workshops, FAA Systems Research and Development Service activities and our regional/field visits with users and facilities. The 1980 Air Traffic goals and objectives identified the need to update ATC procedures and improve service to helicopters. We think this effort can help conserve fuel, minimize in-flight delays to users and enhance safety in the terminal environments.

Our approach has been to concentrate on VFR and Special VFR procedures since we believe this will yield the greatest benefits to the largest number of helicopter operators and users. During our field visits, it was surprising to learn how many pilots and controllers felt there was no need to revise any ATC procedures for helicopters This is not to say none were needed but it may be a tribute to the professionalism of helicopter pilots and controllers in getting the job done at the local level while maintaining an enviable safety record.

During the next few minutes, I will give you an overview of our proposed revisions and mention the current status if appropriate. I will also mention a few Air Traffic activities and plans. Afterwards, I will respond to questions or discuss detailed individual issues during the breaks. Although the comment period for input is past, I will still be happy to include your concerns and recommendations in the final analysis of the proposals.

The proposed Radio Communications Transfer procedure is a technique to encourage controllers to avoid issuing frequency changes to single-piloted helicopters at an inopportune or critical time. The procedure will be applied only if the controller has knowledge that the helicopter has a single pilot, or upon pilot request.

Taxiing definitions have been proposed to distinctly describe the kind of ground movement intended or expected to be performed. The word "taxi" applies to helicopters in the same manner as airplanes. "Hover taxi" describes ground movement in ground effect not above 25 feet. "Air taxi", the preferred method to be used for helicopters allows the pilot to proceed via either a hover taxi or flight out of ground effect but not above 100 feet. This should help expedite arrivals/departures while conserving fuel.

These definitions become the basis for improved taxi procedures in the controller handbook. We have also included notes to alert controllers to a helicopter's characteristics such as ground resonance, high fuel consumption during hovering, and rotorwash during hover taxiing. Phraseology examples are also intended to use language characteristic to helicopter operations, e.g., Use caution, loose debris, light aircraft, etc.

The proposed definitions for Landing/Takeoff Areas, Operating Areas, Landing Sites, Helipads and Heliports are intended to facilitate air traffic control as well as establish a common understanding of the different kinds of areas from which helicopters operate. We have attempted to remain within the existing framework of operations, procedures and publications.

Helicopter flexibility makes flight possible to or from almost anywhere on the airport. This may create problems for controllers having a limited view or knowledge of the area to or from which flight is requested. Some locations identify and mark helicopter operating areas--others do not, at least until a problem occurs. We are endeavoring to evolve common terms of reference to provide you the best service possible. Yet situations do arise that require controllers to rely entirely upon pilot judgment or knowledge of airport procedures and safe operating practices. Therefore we must develop words to assure that responsibility for the operation is properly understood.

The Takeoff and Landing proposals address departures and arrivals from areas other than active runways. Concepts encourage efficient operation to minimize taxiing and conserve fuel. The issuance of wind will be deleted since it is already covered. A modification to runway exiting procedures, normally used for airplanes, should expedite arrival clearances to helicopters since timing is not critical.

The Closed Traffic proposal is designed to formalize procedures in use at many locations and to encourage simultaneous non-interfering operations while other aircraft use active runways. These kinds of operations maximize use of sod areas between runways or portions of inactive runways for training and maintenance flights.

The Helicopter Separation/Aircraft Categories proposal affects simultaneous parallel operations--same direction and opposite direction. Existing procedures are inadequate and do not properly address the mix of airplanes and helicopters. One table addresses both, and a separate table addresses separation between helicopters which we believe should be less. The helicopter table is not limited to same direction or opposite direction operations. The "Category" definitions are solely for Air Traffic purposes and are proposed to include helicopters in the three categories along with airplanes of similar size so that less separation is applied in lieu of "all other" or Category III which covers everything above 12,500 lbs. The Cat I portion may be revised from 6500 lbs to 6000 lbs. The proposal could reduce separation even further between two helicopters at full operating RPM. The major problem here is how a controller can determine full operating RPM. I should emphasize that these separation criteria are for controller application and would not be restrictive at uncontrolled fields or heliports.

Special VFR. From a control standpoint, Special VFR is really an IFR procedure, requiring specified separation from IFR aircraft. As you know, helicopters enjoy the benefit, sometimes, of this unique method for VFR flight in an otherwise IFR environment. If a helicopter encroaches, if you will, in the "neutral zone" an incident could occur which must be investigated. Safety could be jeopardized

and the pilot or controller responsiblity questioned. As you know, there is wide variance in the methods used for Special VFR helicopter operations. Traffic density, airspace availability, IFR acceptance rates and demands, topography, multiple airports or even personalities and attitudes are factors. We believe our proposal provides some innovative techniques to make Special VFR operations more efficient and useful. Options would include:

- Letters of agreement as is done now.

- Use of special procedures or charts describing or depicting visual references, navigational references, routes, holding points, or checkpoints to achieve separation.

- Use of topographical features, prominent landmarks, or other means to insure separation with minimum pilot-controller communication.

- Use of radar. I might mention that transponders with Mode C are of tremendous benefit to controllers and greatly enhance confidence in these kinds of operations involving minimim or non-interfering separation.

- Reduction of visual separation between helicopters when visual separation can be applied by pilots or controllers.

- Use of altitude 500 feet below minimum vectoring altitude, or lower if pilot concurrence is received. The pilot concurrence may be revised to be at pilot request, particularly at night.

Stage III separation as described in the proposal is being reviewed because of the potential impact it might have on users. It would be desirable to provide the same type separation as is applied with airplanes, or the mix or airplanes and helicopters, except we would add the exception for helicopters to be vectored 500' below MVA's. It appears that some form of visual separation might be possible to bridge the gap, such as the use of landing lights in addition to traffic advisories. A new proposal will have be developed and circulated for comments.

The proposals I have just discussed are currently being analyzed and some may become effective in July or October. Final action on on the proposals includes notification to user organizations . Action

will be supplemented with material in the Airman's Information Manual to explain the procedures to pilots to help assure understanding. Controversial issues will either be modified or new proposals issued to achieve the best possible solution. In some instances, it may be necessary for the military to establish modified ATC procedures for certain military purposes although we make every effort possible to apply standardized civil/military procedures.

Before I entertain questions, I would like to mention some other Air Traffic activities and future plans which may be of interest to you.

- As a result of the work of Helicopter Safety Advisory Conference and the FAA Southwest Region, Air Traffic has developed the U.S. Gulf Coast Sectional Chart to provide flight information for low flying aircraft operating into and around the Gulf of Mexico The chart includes extended offshore coverage, oil leasing grids, the identification of high intensity helicopter operating areas and the exclusion of information not pertinent to low flying operations.

- Air Traffic has interfaced RNAV and other IFR separation criteria to support IFR LORAN C operations in the Off-shore IFR system developed by Houston Air Route Traffic Control Center.

- We are conducting a review of VFR Charts with input from other FAA offices to determine what can be done to improve the usefulness of Sectional and Terminal Area Charts for the user. A major portion of the initial user input has been from helicopter pilots. When these concepts are sufficiently developed into prototype charts, the aviation public will be asked for comments and recommendations.

- The Terminal Air Traffic Procedures Branch is working on a concept for VFR/Special VFR Terminal charts where there is a demonstrated need to depict helicopter routes. This may or may not be a part of the VFR Chart review.

- We are also involved in the development of new systems such as MLS, LORAN C, Airborne Radar Approaches and will be looking for new techniques/ideas to support these programs and future user needs.

Within the last few months, key Air Traffic executive changes have included Mr. Ray Van Vuren, the Director of Air Traffic Service; Mr. Willard Reazin, Chief, Air Traffic Procedures Division; Mr. Keith Potts, Chief, Airspace and AT Rules Division, and Mr. Walter Mitchell, Chief, Terminal Procedures Branch. Personally, I have been very impressed with the techical competence, dedication, and sensitivity tc the needs of the aviation system users including helicopter operators and users.

In summary, we believe Air Traffic and other involved offices are going to be very responsive and supportive of your needs. But even more important, the local facilities and Regional offices are the Action people who really make the system work for you. Get to know them, your Air Traffic System, and be aware of their problems. But above all, help them learn your capabilities and vour requirements so that your problems can be solved in an atmosphere of mutual respect. Thank you. Do you have any questions?

AAT-320 7/22/80

SUBJECT: Summary - Proposed Terminal ATC Procedures for Helicopters, Handbook 7110.65B

26d. Radio Communications Transfer. Proposes a recommended technique to facilitate control transfer of single-piloted helicopters.

478, 479. Special VFR Helicopter Operations/Separation. Proposes revised requirements for LOA's, more latitude for facility chiefs in the development of Special VFR routes/procedures, revises criteria and clarifies wording. Proposes simplified criteria (TRSA) and proposes helicopter operations 500' below minimum vectoring altitudes to enhance separation from airplanes.

972,975. Taxi Information. Proposes glossary definitions and techniques for handling helicopters during ground taxiing (with wheels), hover taxiing, and air taxiing operations. Encourages energy conservation through direct routing where possible.

997. Helicopter Takeoff Clearance. Proposes methods, based on common techniques already in use at many locations, to issue takeoff clearance from areas other than active runways where conditions permit. Addresses operations from "non-designated areas" to assure Airport Manager/Flight Standards involvement and proposes language "at your own risk" when the operation is from non-visible or non-designated areas.

1020b,c. Helicopter Landing Clearance. Proposes methods similar to 997 above and includes illustrations as does 997. The term 'at your own risk' addresses common situations where helicopter pilots request clearance to land at unmarked, unlighted areas or non-visible areas where obstructions might exist. 997 & 1020b,c minimize excessive taxiing and conserve fuel.

1023. Runway Exiting. Proposes an exception for helicopters under certain conditions to facilitate helicopter movements.

1027. Helicopter Closed Traffic. Proposes procedures for simultaneous helicopter traffic patterns in areas not interfering with runway traffic patterns. Explains that most helicopters are piloted from the right-hand side of the cockpit.

1103-1105, 1110a. Simultaneous Operations, Aircraft Categories. Integrates helicopters and fixed wing in the Simultaneous Same Direction/Opposite Direction tables, and includes helicopters in appropriate Aircraft Categories I, II, and III. Current language, by omission, places all helicopters in Category III, (All others), which is unduly restrictive to light helicopters. Establishes a new table for helicopter (only) operations and proposes new separation criteria. Addresses further reduction of separation for helicopters operating in close proximity and identifies operator/pilot responsibilities for special operations.

1283,1284. TRSA Stage III for Helicopters. Clarifies current language to assure helicopters have visual contact with other helicopters before discontinuing separation service when unnecessary for helicopters.

## PROPOSED REVISIONS TO ATC HANDBOOK

| | |
|---|---|
| Radio Communications Transfer | Proposal AAT-320-80-23 |
| Pilot-Controller Glossary Definitions | -24 |
| Taxi Information | -25 |
| Definition of Helicopter Landing Areas, Landing Sites, Helipads and Heliports | -31 |
| Takeoff Clearance for Helicopters | -29 |
| Landing Clearance for Helicopters | -30 |
| Closed Helicopter Traffic | -28 |
| Helicopter Separation Criteria/Aircraft Categories | -22 |
| Special VFR Helicopter Separation | -27 |
| Stage III Service, Helicopter Separation | -26 |

A110

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Date: July 23, 1980

Proposal Number: AAT-320-80-23

Document Affected:
- ☐ 7110.10
- ☒ 7110.65
- ☐ 7210.3
- ☐ 7610.4
- ☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN AAT-320
800 Independence Ave., S.W.
Washington, D.C. 20591

Reply By: 9/26/80

TO: ("X" offices receiving proposal for review.)

**INDUSTRY**

- ☒ ALPA
- ☒ AOPA
- ☒ APA
- ☒ ATA
- ☒ ATCA
- ☒ ATPAC
- ☒ AHPA
- ☒ EAA
- ☒ HAI
- ☒ AHS
- ☒ NACA
- ☒ NATA
- ☒ NBAA
- ☒ NAATS
- ☒ NTSB
- ☒ PATCO
- ☒ PHPA
- ☒ EHHC
- ☒ HSAC
- ☐ NEHPA

Helicopter Operations Task Force (FAA)

- ☒ AFO-820
- ☒ AFO-250
- ☒ AWS-160
- ☒ AWS-130
- ☒ ATF-4
- ☒ ASF-300
- ☒ APF-400
- ☒ AAS-100
- ☒ ARD-330
- ☒ ANA-110

**FAA REGIONS**

- ☒ ALASKA
- ☒ CENTRAL
- ☒ EASTERN
- ☒ GREAT LAKES
- ☒ NEW ENGLAND
- ☒ NORTHWEST
- ☒ PACIFIC
- ☒ ROCKY MOUNTAIN
- ☒ SOUTHERN
- ☒ SOUTHWEST
- ☒ WESTERN
- ☒ AAC-930

**FSSCOM**

- ☒ AAL
- ☒ ACE
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- ☒ AGL
- ☒ ANE
- ☒ ANW
- ☒ APC
- ☒ ARM
- ☒ ASO
- ☒ ASW
- ☒ AWE

**COPCOM**

| | En Route | Terminal |
|---|---|---|
| AAL | ☐ | ☒ |
| ACE | ☐ | ☒ |
| AEA | ☐ | ☒ |
| AGL | ☐ | ☒ |
| ANE | ☐ | ☒ |
| ANW | ☐ | ☒ |
| APC | ☐ | ☒ |
| ARM | ☐ | ☒ |
| ASO | ☐ | ☒ |
| ASW | ☐ | ☒ |
| AWE | ☐ | ☒ |
| USA | ☒ | |
| USAF | ☒ | |
| USN | ☒ | |

**FAA HEADQUARTERS**

- ☒ AAT-20
- ☒ AAT-200
- ☒ AAT-320
- ☒ AAT-330
- ☒ AAT-340
- ☒ AAT-360
- ☒ AAT-370
- ☒ AAT-420
- ☒ AAT-520
- ☒ AAT-530
- ☒ AAT-14
- ☒ AAT-304
- ☒ AFO-1
- ☒ AGC-23
- ☒ ARD-100
- ☒ AAT-305 Info
- ☒ AAT-100
- ☒ AFO-560

**MILITARY**

- ☒ USA
- ☒ USAF
- ☒ USN

CANADA

- ☒ ATPI (Transport Canada)

*PLEASE INDICATE YOUR COMMENTS ON THE ENCLOSED PROPOSAL IN THE EVALUATION SECTION BELOW AND RETURN TO THE ABOVE ADDRESS IF ADDITIONAL SPACE IS REQUIRED, CONTINUE ON REVERSE*

EVALUATION: ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
| | | |

FAA Form 7000-2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 2 5 1880

7110.65-26d

Subject: Radio Communications Transfer

I. BACKGROUND. The purpose of this proposed change is to alert controllers to the characteristics of helicopters and the potential hazard involved when a single-piloted helicopter is requested to change radio frequency while operating close to the ground. Related proposals are planned to revise para 972 and add a new paragraph 975.

II. PROPOSAL.

Handbook 7110.65B-26d (added) Avoid issuing a frequency change to single-piloted helicopters that are taxiing, hovering, or while flying near the ground. In an emergency or critical situation, relay the necessary control instructions until the pilot is able to change frequency.

26d Note.-- Most single-piloted helicopters require the use of both hands and feet to maintain control. Although flight control friction devices assist the pilot, changing frequency could result in loss of control. If in doubt, query the pilot as to his ability to change frequency.

26d Reference.-- 7110.65B-975

If you have any questions or wish to discuss the matter, please contact Mr. Glenn Leister, AAT-320.10, telephone number (202) 426-8511.

L. Lane Speck
Chief, Terminal Operations and Procedures Branch
ATC Operations and P ocedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Date: July 23, 1980

Proposal Number: AAT-320-80-24

Document Affected:
☐ 7110.10 ☒ 7110.65
☐ 7210.3 ☐ 7610.4
☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN. AAT-320
800 Independence Ave., S.W.
Washington, D.C 20591

Reply By: 9/26/80

TO ("X" offices receiving proposal for review.)

| INDUSTRY | | FAA REGIONS | FSSCOM | COPCOM En Route | COPCOM Terminal | FAA HEADQUARTERS | |
|---|---|---|---|---|---|---|---|
| ☒ ALPA | ☒ NACA | ☒ ALASKA | ☒ AAL | ☐ AAL | ☒ | ☒ AAT-20 | ☒ AAT-530 |
| ☒ AOPA | ☒ NATA | ☒ CENTRAL | ☒ ACE | ☐ ACE | ☒ | ☒ AAT-200 | ☒ AAT-14 |
| ☒ APA | ☒ NBAA | ☒ EASTERN | ☒ AEA | ☐ AEA | ☒ | ☒ AAT-320 | ☒ AAT-304 |
| ☒ ATA | ☒ NAATS | ☒ GREAT LAKES | ☒ AGL | ☐ AGL | ☒ | ☒ AAT-330 | ☒ AFO-1 |
| ☒ ATCA | ☒ NTSB | ☒ NEW ENGLAND | ☒ ANE | ☐ ANE | ☒ | ☒ AAT-340 | ☒ AGC-23 |
| ☒ ATPAC | ☒ PATCO | ☒ NORTHWEST | ☒ ANW | ☐ ANW | ☒ | ☒ AAT-360 | ☒ AFD-100 |
| ☒ AHFA | ☒ PHPA | ☒ PACIFIC | ☒ APC | ☐ APC | ☒ | ☒ AAT-370 | ☒ AAT-305 Info |
| ☒ EAA | ☒ ERHC | ☒ ROCKY MOUNTAIN | ☒ ARM | ☐ ARM | ☒ | ☒ AAT-420 | ☒ AAT-100 |
| ☒ HAI | ☒ HSAC | ☒ SOUTHERN | ☒ ASO | ☐ ASO | ☒ | ☒ AAT-520 | ☒ AFO-560 |
| ☒ AHS | NEHPA | ☒ SOUTHWEST | ☒ ASW | ☐ ASW | ☒ | MILITARY | |
| Helicopter Operations Task Force (FAA) | | ☒ WESTERN | ☒ AWE | ☐ AWE | ☒ | ☒ USA | ☒ USAF |
| ☒ AFO-820 | ☒ ASF-300 | ☒ AAC-930 | | USA | ☒ | ☒ USN | |
| ☒ AFO-250 | ☒ APP-400 | | | USAF | ☒ | CANADA | |
| ☒ AWS-160 | ☒ AAS-100 | | | USN | ☒ | ☒ ATPI (Transport Canada) | |
| ☒ AWS-130 | ☒ AFD-330 | | | | | | |
| ☒ ATF-4 | ☒ ANA-110 | | | | | | |

*PLEASE INDICATE YOUR COMMENTS ON THE ENCLOSED PROPOSAL IN THE EVALUATION SECTION BELOW AND RETURN TO THE ABOVE ADDRESS. IF ADDITIONAL SPACE IS REQUIRED, CONTINUE ON REVERSE.*

EVALUATION: ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
| | | |

FAA Form 7000-2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 23 1980

Subject: Pilot-Controller Glossary Definitions

I. BACKGROUND. These definitions are intended for use as a part of the proposed change to 7110.65B-972 d, e, and f. These terms should more accurately define the helicopter operation being conducted and improve pilot-controller understanding.

II. PROPOSAL.

TAXI . . . (existing definition ) . Also used to clear a helicopter equipped with wheels to ground taxi from one point to another, normally via movement areas. See AIR TAXI, HOVER TAXI, AIM, 7110.65B-972.

HOVER TAXI. Used to clear a helicopter or VTOL aircraft to proceed from one point to another at relatively slow speed, normally in ground effect not above 25 feet AGL. See TAXI, AIR TAXI, AIM, 7110.65B-972.

AIR TAXI. Used to clear helicopters or VTOL aircraft to proceed from one point to another for ground movement or on-airport operations, but not to cross active runways unless specifically cleared. The aircraft may proceed via a hover taxi or flight within a safe and reasonable airspeed/altitude as determined by the pilot, but normally not above 100 feet AGL. See TAXI, HOVER TAXI, AIM, 7110.65B-972.

If you have any questions or wish to discuss the matter, please contact Mr. Glenn Leister, AAT-320.10, telephone number (202) 426-8511.

L. Lane Speck
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Date: 7/23/80

Proposal Number: AAT-320-80-25

Document Affected:
- ☐ 7110.10
- ☒ 7110.65
- ☐ 7210.3
- ☐ 7610.4
- ☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN: AAT-320
800 Independence Ave., S.W.
Washington, D.C. 20591

Reply By: 9/26/80

TO ("X" offices receiving proposal for review.)

**INDUSTRY**

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- ☒ APA
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- ☒ ATA
- ☒ NAATS
- ☒ ATCA
- ☒ NTSB
- ☒ ATPAC
- ☒ PATCO
- ☒ HELA
- ☒ HSAC
- ☒ AHS
- NEHPA

Helicopter Operations Task Force (FAA)

- ☒ AFO-800
- ☒ ASF-300
- ☒ AFO-250
- ☒ APP-400
- ☒ AWS-160
- ☒ AAS-100
- ☒ AWS-130
- ☒ AFO-330
- ☒ ATF-4
- ☒ ANA-110

**FAA REGIONS**

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- ☒ ROCKY MOUNTAIN
- ☒ SOUTHERN
- ☒ SOUTHWEST
- ☒ WESTERN
- ☒ AAC-930

**FSSCOM**

- ☒ AAL
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- ☒ ANE
- ☒ ANW
- ☒ APC
- ☒ ARM
- ☒ ASO
- ☒ ASW
- ☒ AWE

**COPCOM**

| | En Route | Terminal |
|---|---|---|
| AAL | ☐ | ☒ |
| ACE | ☐ | ☒ |
| AEA | ☐ | ☒ |
| AGL | ☐ | ☒ |
| ANE | ☐ | ☒ |
| ANW | ☐ | ☒ |
| APC | ☐ | ☒ |
| ARM | ☐ | ☒ |
| ASO | ☐ | ☒ |
| ASW | ☐ | ☒ |
| AWE | ☐ | ☒ |
| USA | ☒ | |
| USAF | ☒ | |
| USN | ☒ | |

**FAA HEADQUARTERS**

- ☒ AAT-20
- ☒ AAT-530
- ☒ AAT-200
- ☒ AAT-14
- ☒ AAT-320
- ☒ AAT-304
- ☒ AAT-330
- ☒ AFO-1
- ☒ AAT-340
- ☒ AGC-23
- ☒ AAT-360
- ☒ ARD-100
- ☒ AAT-370
- ☒ AAT-305 Info
- ☒ AAT-420
- ☒ AAT-100
- ☒ AAT-520
- ☒ AFO-560

**MILITARY**

- ☒ USA
- ☒ USAF
- ☒ USN

CANADA

- ☒ ATPI (Transport Canada)

*PLEASE INDICATE YOUR COMMENTS ON THE ENCLOSED PROPOSAL IN THE EVALUATION SECTION BELOW AND RETURN TO THE ABOVE ADDRESS. IF ADDITIONAL SPACE IS REQUIRED, CONTINUE ON REVERSE.*

EVALUATION ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
| | | |

FAA Form 7000-2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 23 1980

Proposal 7110.65B-972, 975

SUBJECT: Taxi Information

I. BACKGROUND:

This proposal is intended to establish defined terminology and phraseology for use in the ground movement of helicopters. The only term currently defined is "air taxi" which is found in a note to paragraph 1130. That definition is really just an explanation that it is an operation "normally not above 10 feet," which is not realistic with today's helicopters. This proposed procedure and the definitions in an accompanying proposal are designed to more accurately describe the actual helicopter operation being conducted. The proposed revision in paragraph 975 is also related to another separate proposal and is intended to provide for the transfer of radio communications to the appropriate ATC duty position within the tower; e.g., ground control or local (tower) control. The use of notes to the procedures are planned for the purpose of educating controllers on helicopter capabilities.

II. PROPOSAL

7110.65B-972 - Add subparagraph d, e, and f to read as follows:

972.d. When necessary to clear a helicopter to ground taxi using wheels, issue instructions using the phraseology in paragraphs a, b, or c above. For helicopters with skid-type landing gear, use paragraphs e or f below as appropriate.

972.d. Note. - Ground taxiing uses less fuel and minimizes air turbulence. However, under certain conditions, such as rough/soft/uneven terrain, it may become necessary for a helicopter to hover taxi or air taxi for safety considerations. Helicopters with articulating rotors (usually 3 or more main rotor blades) are subject to "ground resonance" and may on rare occasions, suddenly lift off the ground to avoid severe damage/destruction.

972.e. When necessary to clear helicopters or VTOL aircraft to proceed at a relatively slow speed; e.g., hover taxi in ground effect, from one point to another, use the appropriate phraseology in paragraphs a, b, or c above except as follows:

Phraseology:

HOVER TAXI:
CAUTION (dust, blowing snow, loose debris, light aircraft, personnel, etc.)

972.e. Note. - When hovering, a helicopter or VTOL aircraft consumes fuel at a high burn rate. At airspeeds above approximately 20 knots, helicopter fuel consumption is reduced, the ground cushion air turbulence (rotor wash) recedes, and wake turbulence commences.

972.e. References. - 7110.65B-26.d., Pilot/Controller Glossary (hover taxi), AIM.

972.f. When necessary to clear a helicopter or VTOL aircraft to proceed from one point to another, either via hover taxi or flight at pilot option, use the appropriate phraseology in paragraphs a, b, or c above except as follows:

Phraseology:

AIR TAXI
VIA (direct or route prescribed)
TO (location, heliport, helipad, movement/operating areas, inactive/active runway)
REMAIN AT OR BELOW (altitude, if required)
CAUTION (wake turbulence, construction equipment)
REMAIN WELL CLEAR or AVOID (light fixed-wing taxiing, vehicles, personnel)
LAND AND CONTACT TOWER OR HOLD FOR (reason, landing/taxiing aircraft, release, clearance to cross runway, etc.)

972.f. Note. - The term AIR TAXI authorizes a helicopter or VTOL aircraft to be hover taxiied or flown within a reasonable altitude or airspeed, whichever is determined by the pilot to be the safer and more operationally expedient method for movement. AIR TAXI is the preferred method for helicopter movements on airports provided ground operations/ conditions permit.

972.f. Reference - 7110.65B-26.d., 1103, 1105, Pilot/Controller Glossary (air taxi), AIM.

975. Taxi information for single piloted helicopters. Issue taxi information to helicopters as in 972 above and if the helicopter requires no further taxi instructions, instruct the pilot to monitor/contact tower on the appropriate frequency.

Note. - This procedure enables a single pilot to set his radio before liftoff and thereby avoid having to land before making the frequency change to tower.

975. Reference - 7110.65B-26.d.

L. LANE SPECK
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Date: 7/23/80

Proposal Number: AAT-320-80- 31

Document Affected:
☐ 7110.10 ☒ 7110.65
☐ 7210.3 ☐ 7610.4
☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN. AAT-320
800 Independence Ave., S.W.
Washington, D.C. 20591

Reply By: 9/26/80

TO: ("X" offices receiving proposal for review.)

**INDUSTRY**

- ☒ ALPA
- ☒ AOPA
- ☒ APA
- ☒ ATA
- ☒ ATCA
- ☒ ATPAC
- ☒ AHPA
- ☒ EAA
- ☒ HAA
- ☒ AHS
- ☒ NACA
- ☒ NATA
- ☒ NBAA
- ☒ NAATS
- ☒ NTSB
- ☒ PATCO
- ☒ PHPA
- ☒ ERHC
- ☒ HSAC
- NEHPA

Helicopter Operations Task Force (FAA)

- ☒ AFO-820
- ☒ AFO-250
- ☒ AWS-160
- ☒ AWS-130
- ☒ ATF-4
- ☒ ASF-300
- ☒ APP-400
- ☒ AAS-100
- ☒ ARD-330
- ☒ ANA-110

**FAA REGIONS**

- ☒ ALASKA
- ☒ CENTRAL
- ☒ EASTERN
- ☒ GREAT LAKES
- ☒ NEW ENGLAND
- ☒ NORTHWEST
- ☒ PACIFIC
- ☒ ROCKY MOUNTAIN
- ☒ SOUTHERN
- ☒ SOUTHWEST
- ☒ WESTERN
- ☒ AAC-930

**PSSCOM**

- ☒ AAL
- ☒ ACE
- ☒ AEA
- ☒ AGL
- ☒ ANE
- ☒ ANW
- ☒ APC
- ☒ ARM
- ☒ ASO
- ☒ ASW
- ☒ AWE

**COPCOM**

| | En Route | Terminal |
|---|---|---|
| AAL | ☐ | ☒ |
| ACE | ☐ | ☒ |
| AEA | ☐ | ☒ |
| AGL | ☐ | ☒ |
| ANE | ☐ | ☒ |
| ANW | ☐ | ☒ |
| APC | ☐ | ☒ |
| ARM | ☐ | ☒ |
| ASO | ☐ | ☒ |
| ASW | ☐ | ☒ |
| AWE | ☐ | ☒ |
| USA | | ☒ |
| USAF | | ☒ |
| USN | | ☒ |

**FAA HEADQUARTERS**

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- ☒ AAT-520
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- ☒ AAT-14
- ☒ AAT-304
- ☒ AFO-1
- ☒ AGC-23
- ☒ AFD-100
- ☒ AAT-305 info
- ☒ AAT-100
- ☒ AFO-560

**MILITARY**

- ☒ USA
- ☒ USAF
- ☒ USN

CANADA

- ☒ ATPI (Transport Canada)

*PLEASE INDICATE YOUR COMMENTS ON THE ENCLOSED PROPOSAL IN THE EVALUATION SECTION BELOW AND RETURN TO THE ABOVE ADDRESS IF ADDITIONAL SPACE IS REQUIRED, CONTINUE ON REVERSE.*

EVALUATION ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
| | | |

FAA Form 7000-2 (3-79) SUPERSEDES PREVIOUS EDITION

JUL 23 1980

Subject: Definition of Helicopter Landing Areas, Helicopters, Landing Site, Helipad and Heliport.

I. BACKGROUND:

Several terms have become commonplace to describe locations where helicopters land and takeoff. This proposal defines each of the terms currently in use. While it would be desirable to reduce the number of definitions involved, each has specific characteristics and usage which are not necessarily applicable to the others. These definitions should assist the users and managers of the system by clarifying what is meant when a particular term is used. Air traffic control procedures (in separate proposals) apply these terms to control of helicopters.

II. PROPOSAL:

HELICOPTER LANDING/TAKEOFF/OPERATING AREA - An area, site, heliport, or portion of a strip/taxiway/runway used for helicopter landings and takeoffs. The area may or may or may not be marked or lighted and is the point where a takeoff begins, an approach ends or a landing is made. An operating area may be a takeoff/landing area or may be used for low level operations such as hovering and training.

HELICOPTER LANDING SITE - A location used for helicopter takeoffs and landings on a one-time, temporary or infrequent basis, such as near a construction site or scene of an accident.

HELIPAD - A small area, usually a hard surface pad, used for helicopter takeoffs, landing or parking. The area may be marked or lighted; used primarily for landings and takeoffs; or used primarily for parking of one or more helicopters.

HELIPORT - An area of land, water or structure used or intended to be used for the landing and takeoff of helicopters. (FAR Part 1). Heliports may be for public, federal, military, private, or personal use. Some heliports have improvements such as navigational aids, lighting, services, and passenger facilities. Heliports may have multiple landing/takeoff areas, helipads, and may be located within airport boundaries. Certain military heliports have multiple parallel strips or lanes used exclusively for pilot training.

III. ADMINISTRATIVE INFORMATION:

We would appreciate your candid comments on this proposal. If you have any questions or wish to discuss this matter, please contact Glenn A. Leister, AAT-32E.10, (202) 426-8511.

L. LANE SPECK
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Date: 7/23/80

Proposal Number: AAT-320-80-29

Document Affected:
- ☐ 7110.10 ☒ 7110.65
- ☐ 7210.3 ☐ 7610.4
- ☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN: AAT-320
800 Independence Ave., S.W.
Washington, D.C. 20591

Reply By: 9/26/80

TO: ("X" offices receiving proposal for review.)

**INDUSTRY**
- ☒ ALPA
- ☒ AOPA
- ☒ APA
- ☒ ATA
- ☒ ATCA
- ☒ ATPAC
- ☒ AHFA
- ☒ EAA
- ☒ HAA
- ☒ AHS
- ☒ NACA
- ☒ NATA
- ☒ NBAA
- ☒ NAATS
- ☒ NTSB
- ☒ PATCO
- ☒ PHPA
- ☒ ERHC
- ☒ HSAC
- NEHPA

Helicopter Operations Task Force (FAA)
- ☒ AFO-820
- ☒ AFO-250
- ☒ AWS-160
- ☒ AWS-130
- ☒ ATF-4
- ☒ ASF-300
- ☒ APP-400
- ☒ AAS-100
- ☒ ARD-330
- ☒ ANA-110

**FAA REGIONS**
- ☒ ALASKA
- ☒ CENTRAL
- ☒ EASTERN
- ☒ GREAT LAKES
- ☒ NEW ENGLAND
- ☒ NORTHWEST
- ☒ PACIFIC
- ☒ ROCKY MOUNTAIN
- ☒ SOUTHERN
- ☒ SOUTHWEST
- ☒ WESTERN
- ☒ AAC-930

**FSCOM**
- ☒ AAL
- ☒ ACE
- ☒ AEA
- ☒ AGL
- ☒ ANE
- ☒ ANW
- ☒ APC
- ☒ ARM
- ☒ ASO
- ☒ ASW
- ☒ AWE

**COPCOM**

| | En Route | Terminal |
|---|---|---|
| AAL | ☐ | ☒ |
| ACE | ☐ | ☒ |
| AEA | ☐ | ☒ |
| AGL | ☐ | ☒ |
| ANE | ☐ | ☒ |
| ANW | ☐ | ☒ |
| APC | ☐ | ☒ |
| ARM | ☐ | ☒ |
| ASO | ☐ | ☒ |
| ASW | ☐ | ☒ |
| AWE | ☐ | ☒ |
| USA | ☒ | |
| USAF | ☒ | |
| USN | ☒ | |

**FAA HEADQUARTERS**
- ☒ AAT-20
- ☒ AAT-200
- ☒ AAT-320
- ☒ AAT-330
- ☒ AAT-340
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- ☒ AAT-370
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- ☒ AAT-520
- ☒ AAT-530
- ☒ AAT-14
- ☒ AAT-304
- ☒ AFO-1
- ☒ AGC-23
- ☒ ARD-100
- ☒ AAT-305 Info
- ☒ AAT-100
- ☒ AFO-560

**MILITARY**
- ☒ USA
- ☒ USAF
- ☒ USN

CANADA
- ☒ ATFI (Transport Canada)

*PLEASE INDICATE YOUR COMMENTS ON THE ENCLOSED PROPOSAL IN THE EVALUATION SECTION BELOW AND RETURN TO THE ABOVE ADDRESS IF ADDITIONAL SPACE IS REQUIRED, CONTINUE ON REVERSE*

EVALUATION: ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
| | | |

FAA Form 7900.2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 23 1980

SUBJECT: Takeoff Clearance for Helicopters

I. BACKGROUND. This proposed change is designed to establish helicopter departure clearance prodedures from areas other than active runways.

II. PROPOSAL.

997. Takeoff Clearance for Helicopters.
a. Issue takeoff clearance to helicopters from areas other than active runways with additional instructions as necessary. Include wind direction and velocity if departure is downwind. Whenever possible, issue takeoff clearance in lieu of extended taxi/hover taxi operations.

Phraseology:

CLEARED FOR TAKEOFF FROM (present position, taxiway, helipad, ramp, numbers.)

CLEARED TO AIR TAXI FROM (present position or specified point) TO (another position/point within the airport boundary.)

MAKE IMMEDIATE RIGHT/LEFT TURN FOR (direction) DEPARTURE/DEPARTURE ROUTE (number or code.)

DO NOT OVERFLY (taxiing aircraft, vehicles, personnel, etc.)

REMAIN WELL CLEAR/REMAIN (number) FEET FROM (active runways, parking/loading areas passenger terminal, etc.)

CAUTION (Power lines, unlighted obstructions, trees, wake turbulence, etc.)

a. Note. Avoid downwind departures and if tailwind exceeds 5 knots, obtain pilot concurrence.

a. Illustration

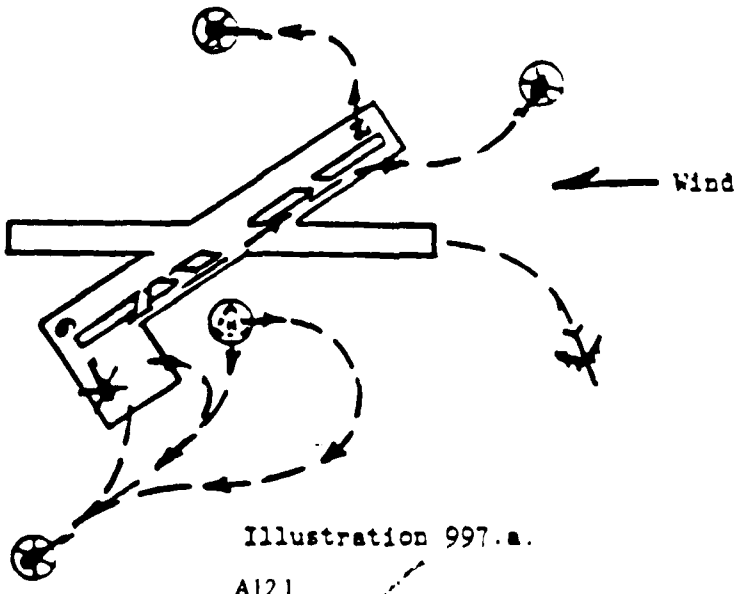


Illustration 997.a.

b. When a helicopter requests takeoff from an area not visible to the tower, from an area not specifically designated for but not prohibited from helicopter use, or from unlighted areas at night, issue the following:

Phraseology:

DEPARTURE FROM (present position, location) WILL BE AT YOUR OWN RISK (and if necessary, additional instructions as in a above.)

We would appreciate your candid comments on this proposal. If you have any questions or wish to discuss this matter, please contact Glenn A. Leister, AAT-320.10, telephone 202/426-8511.

L. LANE SPECK
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN. AAT-320
800 Independence Ave., S.W.
Washington, D.C. 20591

Date: 7/23/80
Proposal Number: AAT-320-80-30
Document Affected:
☐ 7110.10 ☒ 7110.65
☐ 7210.3 ☐ 7610.4
☐ AIM
Reply By: 9/26/80

TO: ("X" offices receiving proposal for review.)

**INDUSTRY**

- ☒ ALPA
- ☒ AOPA
- ☒ APA
- ☒ ATA
- ☒ ATCA
- ☒ ATPAC
- ☒ AHPA
- ☒ EAA
- ☒ HAA
- ☒ AHS
- ☒ NACA
- ☒ NATA
- ☒ NBAA
- ☒ NAATS
- ☒ NTSB
- ☒ PATCO
- ☒ PHPA
- ☒ ERHC
- ☒ HSAC
- NEHPA

Helicopter Operations Task Force (FAA)

- ☒ AFO-820
- ☒ AFO-250
- ☒ AWS-160
- ☒ AWS-130
- ☒ ATF-4
- ☒ ASF-300
- ☒ APP-400
- ☒ AAS-100
- ☒ ARD-330
- ☒ ANA-110

**FAA REGIONS**

- ☒ ALASKA
- ☒ CENTRAL
- ☒ EASTERN
- ☒ GREAT LAKES
- ☒ NEW ENGLAND
- ☒ NORTHWEST
- ☒ PACIFIC
- ☒ ROCKY MOUNTAIN
- ☒ SOUTHERN
- ☒ SOUTHWEST
- ☒ WESTERN
- ☒ AAC-930

**FSCOM**

- ☒ AAL
- ☒ ACE
- ☒ AEA
- ☒ AGL
- ☒ ANE
- ☒ ANW
- ☒ APC
- ☒ ARM
- ☒ ASO
- ☒ ASW
- ☒ AWE

**COPCOM**

| | En Route | Terminal |
|---|---|---|
| AAL | ☐ | ☒ |
| ACE | ☐ | ☒ |
| AEA | ☐ | ☒ |
| AGL | ☐ | ☒ |
| ANE | ☐ | ☒ |
| ANW | ☐ | ☒ |
| APC | ☐ | ☒ |
| ARM | ☐ | ☒ |
| ASO | ☐ | ☒ |
| ASW | ☐ | ☒ |
| AWE | ☐ | ☒ |
| USA | | ☒ |
| USAF | | ☒ |
| USN | | ☒ |

**FAA HEADQUARTERS**

- ☒ AAT-20
- ☒ AAT-200
- ☒ AAT-320
- ☒ AAT-330
- ☒ AAT-340
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- ☒ AAT-370
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- ☒ AAT-304
- ☒ AFO-1
- ☒ AGC-23
- ☒ ARD-100
- ☒ AAT-305 Info
- ☒ AAT-100
- ☒ AFO-560

**MILITARY**

- ☒ USA
- ☒ USAF
- ☒ USN

CANADA

- ☒ ATPI (Transport Canada)

*PLEASE INDICATE YOUR COMMENTS ON THE ENCLOSED PROPOSAL IN THE EVALUATION SECTION BELOW AND RETURN TO THE ABOVE ADDRESS IF ADDITIONAL SPACE IS REQUIRED, CONTINUE ON REVERSE*

**EVALUATION** ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
| | | |

FAA Form 7000.2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 23 1980

SUBJECT: Landing Clearance for Helicopters

I. BACKGROUND. This proposal is intended to establish helicopter landing clearances to areas other than active runways.

II. PROPOSAL.

1020.a. Renumber the existing 1020 as 1020.a.

b. When a landing area other than a runway is available for helicopters, issue landing clearnace preceded with additional instructions as necessary. Include wind direction and velocity if landing is downwind. Issue landing clearance to the helicopter's final destination or to a point as near as possible so as to avoid extended taxiing/hover taxiing.

Phraseology:

MAKE APPROACH STRAIGHT-IN/CIRCLING LEFT/RIGHT TURN TO (location, taxiway, helipad, ramp or other.)

REMAIN WELL CLEAR/REMAIN (number) FEET FROM (runway, taxiway, other helicopter/airplane, as necessary.)

CAUTION (power lines, unlighted obstructions, wake turbulence, rotorwash)

CLEARED TO LAND (location, if not previously given.)

1020.b. Note.--Avoid downwind landings and if tailwind exceeds 5 knots, obtain pilot concurrence.

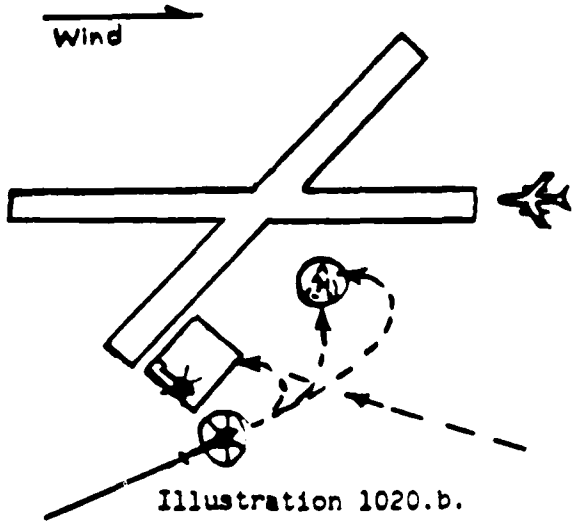


Illustration 1020.b.

7110.23. Revise the note to read:

1023. Note.--". . . prior to landing. It is acceptable to issue exiting instructions to airborne helicopters except when the helicopter is involved in critical manuevers such as an autorotation or simulated emergencies.

1020.c. When a helicopter requests landing at an area not visible to the tower, an area not specifically designated for but not prohibited from helicopter use, or to unlighted areas at night, issue the following:

Phraseology:

LANDING AT (requested location) WILL BE AT YOUR OWN RISK (and if necessary, additional instructions as in b above.)

We would appreciate your candid comments on this proposal. If you have any questions or wish to discuss this matter, please contact Glenn A. Leister, AAT-320.10, telephone 202/426-8511.

L. LANE SPECK
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Date: 7/23/80

Proposal Number: AAT-320-80- 28

Document Affected
- ☐ 7110.10 ☒ 7110.65
- ☐ 7210.3 ☐ 7610.4
- ☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service ATTN. AAT-320
800 Independence Ave., S.W.
Washington, D.C 20591

Reply By: 9/24/80

TO ("X" offices receiving proposal for review)

**INDUSTRY**
- ☒ ALPA
- ☒ AOPA
- ☒ APA
- ☒ ATA
- ☒ ATC4
- ☒ ATPAC
- ☒ AHFA
- ☒ EAA
- ☒ HAI
- ☒ AHS
- ☒ NACA
- ☒ NATA
- ☒ NBAA
- ☒ NAATS
- ☒ NTSE
- ☒ PATCO
- ☒ PHPA
- ☒ ERHC
- ☒ HSAC
- NEHPA Helicopter Operations Task Force (FAA)

**FAA REGIONS**
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- ☒ SOUTHWEST
- ☒ WESTERN
- ☒ AAC-930

**FSSCOM**
- ☒ AAL
- ☒ ACE
- ☒ AEA
- ☒ AGL
- ☒ ANE
- ☒ ANW
- ☒ APC
- ☒ ARM
- ☒ ASO
- ☒ ASW
- ☒ AWE

**COPCOM**

| | En Route | Terminal |
|---|---|---|
| AAL | ☐ | ☒ |
| ACE | ☐ | ☒ |
| AEA | ☐ | ☒ |
| AGL | ☐ | ☒ |
| ANE | ☐ | ☒ |
| ANW | ☐ | ☒ |
| APC | ☐ | ☒ |
| ARM | ☐ | ☒ |
| ASO | ☐ | ☒ |
| ASW | ☐ | ☒ |
| AWE | ☐ | ☒ |
| USA | | ☒ |
| USAF | | ☒ |
| USN | | ☒ |

**FAA HEADQUARTERS**
- ☒ AAT 20
- ☒ AAT 200
- ☒ AAT 320
- ☒ AAT-330
- ☒ AAT-340
- ☒ AAT 360
- ☒ AAT 370
- ☒ AAT-420
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- ☒ AGC-23
- ☒ ARD-100
- ☒ AAT-305 Info
- ☒ AAT-100
- ☒ AFO-560

**MILITARY**
- ☒ USA
- ☒ USAF
- ☒ USN

CANADA
- ☒ ATPI (Transport Canada)

- ☒ AFO-820
- ☒ AFO-250
- ☒ AWS-160
- ☒ AWS-130
- ☒ ATF-4
- ☒ ASF-300
- ☒ AFF-400
- ☒ AAS-100
- ☒ ARD-330
- ☒ ANA-110

*PLEASE INDICATE YOUR COMMENTS ON THE ENCLOSED PROPOSAL IN THE EVALUATION SECTION BELOW AND RETURN TO THE ABOVE ADDRESS IF ADDITIONAL SPACE IS REQUIRED, CONTINUE ON REVERSE*

EVALUATION ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
| | | |

FAA Form 7000.2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 23 1990

7110.65B-1027

SUBJECT: Closed Helicopter Traffic

I. BACKGROUND. This change is intended to establish procedures for helicopter operations in operating areas and to clarify why right hand traffic patterns are preferable for most helicopters.

II. PROPOSAL. Add the following new paragraph.

1027. Closed Helicopter Traffic
a. Approve closed helicopter traffic to areas other than active runways:

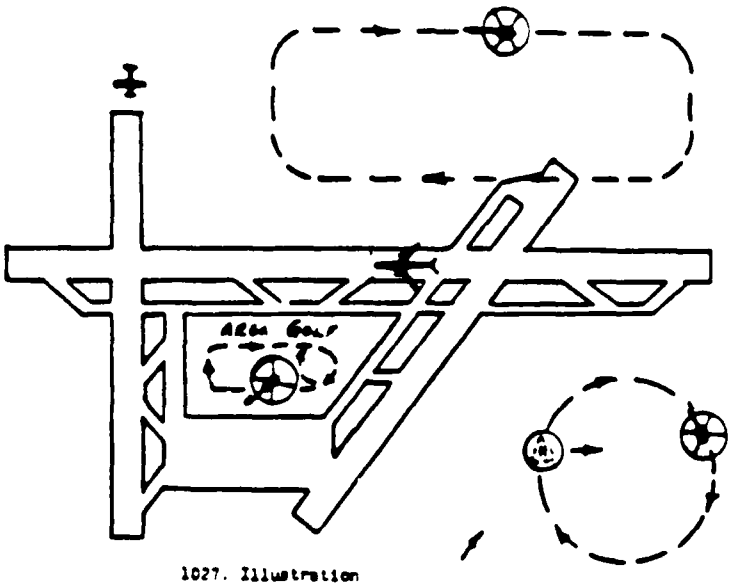
(1) Upon pilot request,

(2) When traffic conditions require, or

(3) When helicopters and other helicopters/airplanes have significant speed differentials and it is expeditious to operate opposite/multiple traffic patterns.

b. Issue sufficient instructions to keep helicopters within specified boundaries when necessary or to insure separation from other operations, e.g. simultaneous fixed wing/helicopter takeoffs/landings from nearby runways.

1027 Note.--Most helicopter cockpits are configured for the pilot to fly from the right seat making right hand patterns/turns most favorable to in-flight pilot visibility.



1027. Illustration

Phraseology:

RIGHT/LEFT CLOSED TRAFFIC APPROVED (specify location, appropriate portions of the taxiway, inactive runway, direction of arrival/departure if necessary.)

REMAIN WITHIN OPERATING AREA (Name or number, and specific boundaries, or altitudes if required, e.g. below 25/500 feet, etc.)

REPORT (position, if required)

MAINTAIN VISUAL SEPARATION FROM (other helicopters, airplanes)

We would appreciate your candid comments on this proposal. If you have any questions or wish to discuss this matter, please contact Glenn A. Leister, AAT-320.10, telephone 202/426-8511.

L. LANE SPECK
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Date: 7/23/80

Proposal Number: AAT-320-80-22

Document Affected:
- ☐ 7110.10
- ☒ 7110.65
- ☐ 7210.3
- ☐ 7610.4
- ☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN AAT-320
800 Independence Ave., S.W.
Washington, D.C. 20591

Reply By: 9/26/80

TO ("X" offices receiving proposal for review.)

**INDUSTRY**

- ☒ ALPA
- ☒ AOPA
- ☒ APA
- ☒ ATA
- ☒ ATCA
- ☒ ATPAC
- ☒ AHPA
- ☒ EAA
- ☒ HAI
- ☒ AHS
- ☒ NACA
- ☒ NATA
- ☒ NBAA
- ☒ NAATS
- ☒ NTSB
- ☒ PATCO
- ☒ PHPA
- ☒ ERHC
- ☒ HSAC
- NEHPA

Helicopter Operations Task Force (FAA)

- ☒ AFO-820
- ☒ AFO-250
- ☒ AWS-160
- ☒ AWS-130
- ☒ ATF-4
- ☒ ASF-300
- ☒ APP-400
- ☒ AAS-100
- ☒ ARD-330
- ☒ ANA-110

**FAA REGIONS**

- ☒ ALASKA
- ☒ CENTRAL
- ☒ EASTERN
- ☒ GREAT LAKES
- ☒ NEW ENGLAND
- ☒ NORTHWEST
- ☒ PACIFIC
- ☒ ROCKY MOUNTAIN
- ☒ SOUTHERN
- ☒ SOUTHWEST
- ☒ WESTERN
- ☒ AAC-930

**FSSCOM**

- ☒ AAL
- ☒ ACE
- ☒ AEA
- ☒ AGL
- ☒ ANE
- ☒ ANW
- ☒ APC
- ☒ ARM
- ☒ ASO
- ☒ ASW
- ☒ AWE

**COPCOM**

| | En Route | Terminal |
|---|---|---|
| AAL | ☐ | ☒ |
| ACE | ☐ | ☒ |
| AEA | ☐ | ☒ |
| AGL | ☐ | ☒ |
| ANE | ☐ | ☒ |
| ANW | ☐ | ☒ |
| APC | ☐ | ☒ |
| ARM | ☐ | ☒ |
| ASO | ☐ | ☒ |
| ASW | ☐ | ☒ |
| AWE | ☐ | ☒ |
| USA | ☒ | |
| USAF | ☒ | |
| USN | ☒ | |

**FAA HEADQUARTERS**

- ☒ AAT-20
- ☒ AAT-200
- ☒ AAT-320
- ☒ AAT-330
- ☒ AAT-340
- ☒ AAT-360
- ☒ AAT-370
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- ☒ AAT-520
- ☒ AAT-530
- ☒ AAT-14
- ☒ AAT-304
- ☒ AFO-1
- ☒ AGC-23
- ☒ AFO-100
- ☒ AAT-305 Info
- ☒ AAT-100
- ☒ AFO-560

**MILITARY**

- ☒ USA
- ☒ USAF
- ☒ USN

CANADA

- ☒ ATPI (Transport Canada)

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EVALUATION ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
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FAA Form 7000-2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 2 3 1990

7110.65B-1103c, 1104d, 1105, 1110a

SUBJECT: Helicopter Separation Criteria/Aircraft Categories

I. BACKGROUND. In view of the inherent flexibility of the helicopter, we believe that more definitive criteria is required to facilitate helicopter operations at controlled airports. The broad criteria presently in use is overly restrictive in certain procedures and not sufficiently defined in others. Our desire is to develop reasonable separation criteria thatare safe, efficient and understandable to pilots and controllers. We must also consider the helicopter-fixed wing relationships and the potential hazards associated with helicopter capabilities.

Helicopters, by definition, are "aircraft" and are considered in Handbook 7110.65B to be in the "All others" Category III. This is unduly restrictive to light helicopters and the concept does not track with the 200 feet separation between helicopters (7110.65B-1130 thru 1132) nor with Advisory Circular 150/5390-1B (Figure 4-1). The 200 feet separation may be acceptable between light helicopters, possibly between other helicopters under certain conditions, but not between light/small helicopters and large helicopters under all conditions.

We recognize that certain specialized civil/military operations may require further separation reduction beyond that in this proposal; however, operations in very close proximity are the responsibility of the operators/pilots concerned and should not require action by control facilities other than normal services such as clearances, traffic advisories, etc. Pilots engaged in such operations must be fully qualified to determine how close to safely operate in respect to other company/military helicopters.

Aircraft Category definitions in the Note to paragraph 1110a have been modified to include helicopters. Although we would like to simplify these definitions to better accommodate the TERP's categories, aircraft groups, etc., as used elsewhere in the handbook, this effort will be limited to the inclusion of helicopters for ATC runway/heliport separation purposes.

In summary, this proposal attempts to clarify existing criteria and establish helicopter separation standards for timely use by Air Traffic controllers. If you have strong feelings that the proposed criteria is too restrictive or not restrictive enough, please furnish recommended criteria with supporting justification or documentation. Bear in mind that controllers must control helicopters and fixed wing in a mixed environment, therefore standard criteria must provide an adequate degree of safety to all aircraft without being cumbersome or too complex to apply. Once definitive criteria is established, we plan to make additional changes to Section 11, Departure Separation, and Section 12, Arrival Separation, to properly accommodate helicopter capabilities when landing or taking off from the same runways with fixed wing aircraft. We also plan to revise Section 13, Helicopter Separation, and explain the new procedures in the Airman's Information Manual.

II. PROPOSAL.

1103.c. The distance between the runways, landing strips, heliports, helipads, or helicopter operating areas is in accordance with the minima in the Table. Use the greater minimum if two categories are involved; or, the minima in 1105 if helicopters only are involved.

1103.c. Table.—Same Direction Distance Minima.

| Aircraft Category (As defined in 1110.a. Note) | Minimum distance Between Parallel Operations | |
|---|---|---|
| | Runway, heliport, helipad centerlines | Edges of adjacent strips, heliports, helipads or helicopter operating areas and a runway |
| Category I | 300 feet (90 meters) | 200 feet (60 meters) |
| Category II | 500 feet (150 meters) | 400 feet (120 meters) |
| Category III | 700 feet (210 meters) | 600 feet (180 meters) |

Note.— Strong crosswinds may make it advisable to increase separation distances if helicopter rotorwash appears to be encroaching upon adjacent runways, strips, heliports or helipads.

1104.d. For a helicopter and an airplane, the distance between the runway centerlines or edges of adjacent strips and helicopter landing areas, helipads or heliports is in accordance with the minima in the Table.

1104.d. Table.—Opposite Direction Helicopter-Airplane Minima.

| Time of Operation | Minimum distance between a helicopter and an airplane | |
|---|---|---|
| | Runway/intersecting runway centerlines and helicopter landing areas, heliports, or helipads with a specifically marked/lighted touchdown point | Edges of adjacent strips or runway/intersecting runway and edges of helicopter landing areas, heliports, or helipads which are or unlighted |
| Between sunrise and sunset | 700 feet (210 meters) | 600 feet (180 meters) |
| Between sunset and sunrise | 700 feet (210 meters) | Not authorized |

1105. Simultaneous Helicopter Operations.

1105.a. Authorize simultaneous helicopter landings, takeoffs or ground movements in accordance with the minima in the Table. Use the greater minima if two categories are involved.

1105.a. Table.—Simultaneous Helicopter Operations Distance Minima.

| Aircraft Category (As defined in 1110.a. Note) | Between a helicopter at operating rotor RPM and a helicopter starting up or shutting down | Between two helicopters at operating rotor RPM |
|---|---|---|
| Category I | 200 feet (60 meters) | 100 feet (30 meters) |
| Category II | 400 feet (120 meters) | 200 feet (60 meters) |
| Category III | 600 feet (180 meters) | 300 feet (90 meters) |
| Note.—Strong winds may make it advisable to increase separation distances if helicopter rotorwash appears to be encroaching upon adjacent helicopters. | | |

1105.b. Reduction of the criteria in 1105.a. may be necessary for certain military or civilian operations and should be covered by approved operating procedures and/or letters of agreement with appropriate authorities as signatories. Unless such procedures/agreements exist, the instructions in paragraphs 997 and 1020 apply.

1110.a. Note.--Aircraft Categories are as follows:

Category I—Light-weight, single-engine, personal-type propeller driven aircraft. Includes helicopters operating at weights of less than 6500 lbs, but not higher performance, single-engine aircraft such as the T-28.

Category II—Light-weight, twin-engine, propeller driven aircraft weighing 12,500 lbs or less such as the Aero Commander, Beech King Air, DeHavilland Dove, Twin Cessna. Includes helicopters operating at weights of 12,500 lbs or less but not Cat I helicopters.

Category III—All other aircraft such as the higher performance single-engine, large twin-engine, four-engine, and turbojet aircraft. Includes helicopters operating at weights of more than 12,500 lbs.

L. LANE SPECK
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION -
FEDERAL AVIATION ADMINISTRATION

Date: 7/23/80

Proposal Number: AAT-320-80-27

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Document Affected
- ☐ 7110.10 ☒ 7110.65
- ☐ 7210.3 ☐ 7610.4
- ☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN: AAT-320
800 Independence Ave., S.W.
Washington, D.C. 20591

Reply By: 9/26/80

TO ("X" offices receiving proposal for review)

**INDUSTRY**
- ☒ ALPA
- ☒ AOPA
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Helicopter Operations Task Force (FAA)
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- ☒ AAS-100
- ☒ ARD-330
- ☒ ANA-220

**FAA REGIONS**
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- ☒ AAC-930

**FSSCOM**
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- ☒ ANW
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- ☒ ARM
- ☒ ASO
- ☒ ASW
- ☒ AWE

**COPCOM**

| | En Route | Terminal |
|---|---|---|
| AAL | ☐ | ☒ |
| ACE | ☐ | ☒ |
| AEA | ☐ | ☒ |
| AGL | ☐ | ☒ |
| ANE | ☐ | ☒ |
| ANW | ☐ | ☒ |
| APC | ☐ | ☒ |
| ARM | ☐ | ☒ |
| ASO | ☐ | ☒ |
| ASW | ☐ | ☒ |
| AWE | ☐ | ☒ |
| USA | | ☒ |
| USAF | | ☒ |
| USN | | ☒ |

**FAA HEADQUARTERS**
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- ☒ AGC-23
- ☒ ARD-100
- ☒ AAT-305 info
- ☒ AAT-100
- ☒ AFO-560

**MILITARY**
- ☒ USA
- ☒ USAF
- ☒ USN

CANADA
- ☒ ACFI (Transport Canada)

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EVALUATION ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
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FAA Form 7000-2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 23 1990

7110.65B-475,1140,1141

SUBJECT: Special VFR Helicopter Separation

I. BACKGROUND. There have been differing interpretations of paragraphs 475, 1140, and 1141. This proposal is intended to simplify application of Special VFR Helicopter Separation, clarify intent and enhance the flexibility of SVFR procedures for helicopters to take advantage of their inherent capabilities. Some of the separation criteria has been increased and some decreased to standardize figures with TRSA criteria. It is believed the proposed criteria should encourage the use of SVFR procedures and thereby benefit helicopter operations rather than penalize them. If users or facilities are aware of any negative impact due to the increased/decreased separation, we would appreciate detailed comments and recommendations.

II. PROPOSAL. Renumber paragraphs 476 through 478, respectively, as 475 through 477. Paragraphs 475, 1140 and 1141 are revised to become 478 and 479.

478. SPECIAL VFR HELICOPTER OPERATIONS. Control a Special VFR helicopter by the preceding Special VFR procedures unless other procedures have been approved. Apply Special VFR Helicopter Separation under paragraph 479 when at least one of the following conditions is met:

(a) Special VFR helicopter procedures are contained in a Letter of agreement, the helicopter operator is a Signatory to the agreement, and the LOA specifies those required visual references, checkpoints, reporting points, routes, holding fixes or helicopter traffic patterns necessary to assure separation.

(b) Special VFR helicopter procedures, containing the necessary visual references in paragraph (a) above, have been approved and are in the possession of the pilots concerned.

(c) The local topographical features, visual references, navigational references, or landmarks are such that a minimum of controller-pilot communication will insure separation.

(d) Radar coverage is adequate to maintain at least 1½ nm separation or insure pilot compliance with approved SVFR helicopter routes.

479. Special VFR Helicopter Separation.
When approved procedures are established and at least one of the conditions in 478 can be met, apply the following minima:
479. Reference. AIM.
(a) Between Special VFR helicopters - 1 mile, or:

(1) If more than one helicopter is proceeding in the same direction along a route, visual separation may be used if accepted by the succeeding helicopter(s), traffic information is exchanged, and each succeeding helicopter(s) has the preceding helicopter(s) in sight, or

(2) For two or more simultaneous helicopter departures, if the course of each diverges by at least 15° from each of the others- instruct

2.

the helicopters to maintain visual separation, the desired course, or the desired route.

(b) Between an arriving/departing Special VFR helicopter and an arriving IFR aircraft executing a straight-in approach or a departing IFR aircraft:

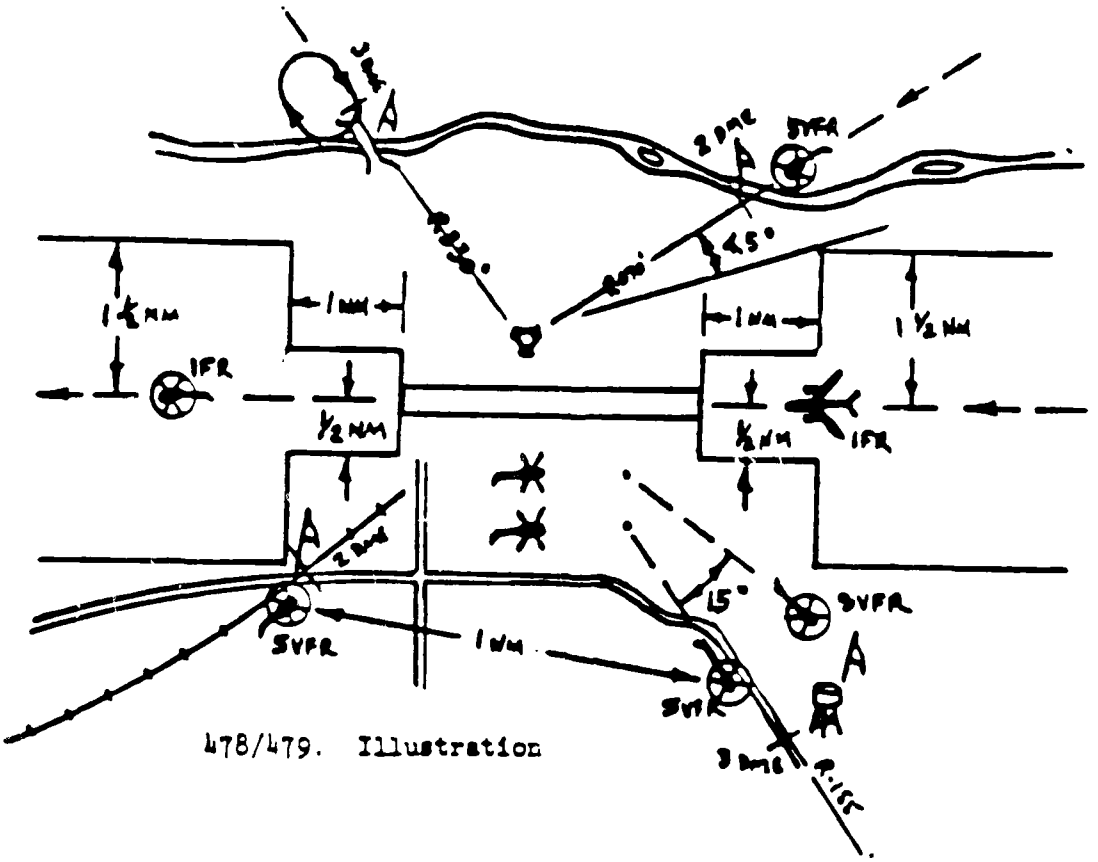
(1) If the IFR aircraft is more than 1 mile from the landing threshold or runway end -1½ mile or 500 feet vertical separation, or

(2) If the IFR aircraft is less than 1 mile from the landing threshold or runway end - ½ mile or 500 feet vertical separation, or

(3) For radar separation within 15 miles of the antenna - 1½ miles or 500 feet vertical separation. You may vector SVFR helicopters at an assigned altitude as low as 500 feet below the MVA or lower only if pilot concurrence is received.

(b)(3) Note.--Altitude assignment or vectors below MVA must be exercised in a manner that permits pilot compliance with appropriate FAR's.

(c) Between an arriving IFR aircraft executing a circling approach or missed approach - 1½ miles or 200 feet vertical separation for Approach Categories A, B and C: 3 miles or 500 feet vertical separation for Approach Categories D and E. You may use radar to reduce the 3 miles as in (b)(3) above.




478/479. Illustration

We would appreciate your candid comments on the proposal. If you have any questions or wish to discuss this matter, please contact Glenn A. Leister, AAT-320.10, telephone 202/426-8511.

L. LANE SPECK
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# AIR TRAFFIC CONTROL DOCUMENT CHANGE PROPOSAL

Date: 7/23/80

Proposal Number: AAT-320-80-26

Document Affected:
☐ 7110.10 ☒ 7110.65
☐ 7210.3 ☐ 7610.4
☐ AIM

RETURN TO: Federal Aviation Administration
Air Traffic Service, ATTN. AAT-320
800 Independence Ave., S.W.
Washington, D.C. 20591

Reply By: 9/24/80

TO ("X" offices receiving proposal for review.)

**INDUSTRY**

☒ ALPA ☒ NACA
☒ AOPA ☒ NATA
☒ APA ☒ NBAA
☒ ATA ☒ NAATS
☒ ATCA ☒ NTSB
☒ ATPAC ☒ PATCO
☒ AHPA ☒ PHPA
☒ EAA ☒ ERHC
☒ HAI ☒ HSAC
☒ AHS NEHPA
Helicopter Operations Task Force (FAA)
☒ AFO-820 ☒ ASF-300
☒ AFO-250 ☒ AFP-400
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☒ AWS-130 ☒ ARD-330
☒ ATF-4 ☒ ANA-110

**FAA REGIONS**

☒ ALASKA
☒ CENTRAL
☒ EASTERN
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☒ NORTHWEST
☒ PACIFIC
☒ ROCKY MOUNTAIN
☒ SOUTHERN
☒ SOUTHWEST
☒ WESTERN
☒ AAC-930

**FSSCOM**

☒ AAL
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☒ AGL
☒ ANE
☒ ANW
☒ APC
☒ ARM
☒ ASO
☒ ASW
☒ AWE

**COPCOM**

| En Route | Terminal |
|---|---|
| ☐ AAL | ☒ |
| ☐ ACE | ☒ |
| ☐ AEA | ☒ |
| ☐ AGL | ☒ |
| ☐ ANE | ☒ |
| ☐ ANW | ☒ |
| ☐ APC | ☒ |
| ☐ ARM | ☒ |
| ☐ ASO | ☒ |
| ☐ ASW | ☒ |
| ☐ AWE | ☒ |
| USA ☒ | |
| USAF ☒ | |
| USN ☒ | |

**FAA HEADQUARTERS**

☒ AAT-20 ☒ AAT-530
☒ AAT-200 ☒ AAT-14
☒ AAT-320 ☒ AAT-304
☒ AAT-330 ☒ AFO-1
☒ AAT-340 ☒ AGC-23
☒ AAT-360 ☒ ARD-100
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☒ AAT-420 ☒ AAT-100
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**MILITARY**

☒ USA ☒ USAF
☒ USN

CANADA
☒ ATPI (Transport Canada)

*PLEASE INDICATE YOUR COMMENTS ON THE ENCLOSED PROPOSAL IN THE EVALUATION SECTION BELOW AND RETURN TO THE ABOVE ADDRESS. IF ADDITIONAL SPACE IS REQUIRED, CONTINUE ON REVERSE.*

EVALUATION ☐ CONCUR ☐ NONCONCUR *(COMMENTS REQUESTED)*

| Signature | Title | Date |
|---|---|---|
| | | |

FAA Form 7000.2 (3-78) SUPERSEDES PREVIOUS EDITION

JUL 23 1980

SUBJECT: Stage III Service, Helicopter Separation

I. BACKGROUND. The intent of the existing paragraph can be misinterpreted that there is no requirement to provide appropriate Stage III Service to helicopters. This proposal improves language and provides additional flexibility for helicopters.

II. PROPOSAL.

1283. Helicopter Separation

a. Separate VFR helicopters from other VFR helicopters according to 1282 unless traffic information has been exchanged and one or more of the helicopters, as appropriate, has visual contact with the other(s).

b. Helicopters may be assigned an altitude as low as 500 feet below the MVA, or lower only with pilot concurrence, consistent with FAR 91.79d.

1284.---IFR altitude criteria, except as in 1283 b.

We would appreciate your candid comments on this proposal. If you have any questions or wish to discuss this matter, please contact Glenn A. Leister, AAT-320.10, telephone 202/426-8511.

L. LANE SPECK
Chief, Terminal Operations and Procedures Branch
ATC Operations and Procedures Division
Air Traffic Service

END

2-87

DTIC